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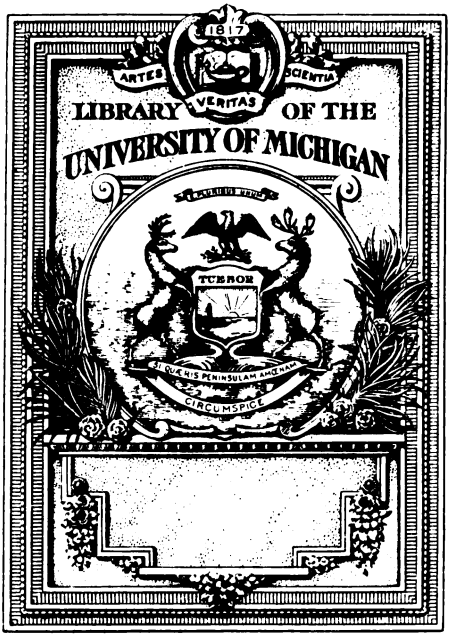

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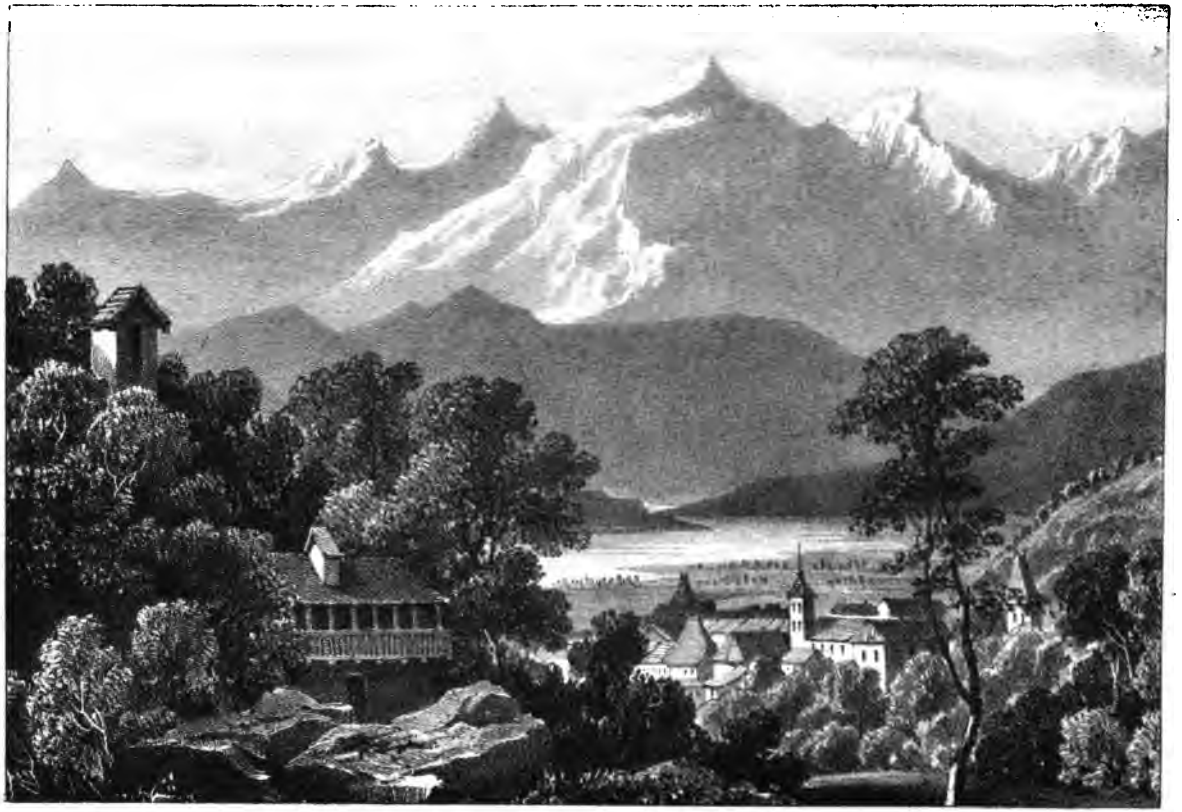

MONT BLANC from SALLENCHE.

Drawn on Stone by J. D. Harding from a Sketch by P[illegible] Printed by C. Hullmandel

NARRATIVE

OF AN

ASCENT TO THE SUMMIT

OF

MONT BLANC,

ON THE

EIGHTH AND NINTH OF AUGUST, 1827.

BY JOHN AULDJO, ESQ.

OF TRINITY COLLEGE, CAMBRIDGE.

" Though steep the track,
The mountain-top will overpay, when climb'd,
The scaler's toil."

SECOND EDITION.

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TO

SIMON McGILLIVRAY, ESQUIRE,

THE FOLLOWING NARRATIVE

IS INSCRIBED,

BY HIS ATTACHED FRIEND,

THE AUTHOR.

Exchg.
Univ. of Western Ontario
6-30-31

PREFACE

TO THE

SECOND EDITION.

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THE reception which this narrative has met with, having rendered another edition necessary, the author has selected the present size as more convenient than that in which it was originally published.

In adapting the lithographic embellishments, he has been enabled to improve them; and he has added two maps of extraordinary merit. Several additions have been made to the work, and many parts of it are illustrated by extracts from the descriptions of writers on the same subject.

PREFACE

TO THE

FIRST EDITION.

In offering the following pages to the public, the author disclaims any desire to put himself forward as an aspirant for literary distinction. The peculiar nature of the work, and the circumstances which have given rise to it, are the best apology he can make for its now appearing in print; nor does he mean to urge the trite and puerile plea of his having been importuned by friends to give to the world a production, of which, in their partiality, they happened to approve.

At the time the author succeeded in

achieving the ascent of Mont Blanc, he had no intention to publish any account of the enterprise; nor did he prepare any materials for appearing before the public in the character of a tourist; but on returning from the mountain, and while the impression produced by the scenes he had witnessed, and the perils he had escaped, was still fresh in his remembrance, he committed to paper some memoranda of the particulars for his own satisfaction, as well as to gratify some friends who he knew would take an interest in the narrative, merely because it was his.

On a subsequent perusal of the accounts given by those who had preceded him in the ascent, he found the appearances observed by each to differ in some degree from those noticed by the others, and none of them exactly to correspond with his impression of what he had himself witnessed. It therefore appeared to him, that a work of circumstantial detail, but

without any ambitious pretensions to scientific research, might still be acceptable to the public; and with that view he drew up the present Narrative. He found, that although the labours of De Saussure, and other succeeding observers, had left nothing new to be explained to the scientific world with regard to the mineralogical formation of the mountain, or its height, or the atmospheric phenomena observable in its ascent, yet the topography of that portion of the Alps, and of the peaks and glaciers which surround the "monarch of mountains," as well as of the beautiful valleys which are spread out beneath, was but imperfectly described; and he conceived that some information and illustrations worthy of notice remained to be offered to the English reader, and to the future traveller. He therefore collected in Switzerland the most interesting views of Mont Blanc and the scenes in its vicinity, and with these he combined a few sketches of

the most striking objects which excited his attention, and of some situations in which, together with the guides, he found himself placed in passing the glaciers. These form a series of lithographic embellishments, executed by artists of the first eminence; and the author has endeavoured to be minutely particular in describing the subject of each representation; he is also convinced that they cannot fail to be admired, whatever may be the opinion formed with regard to the narrative.

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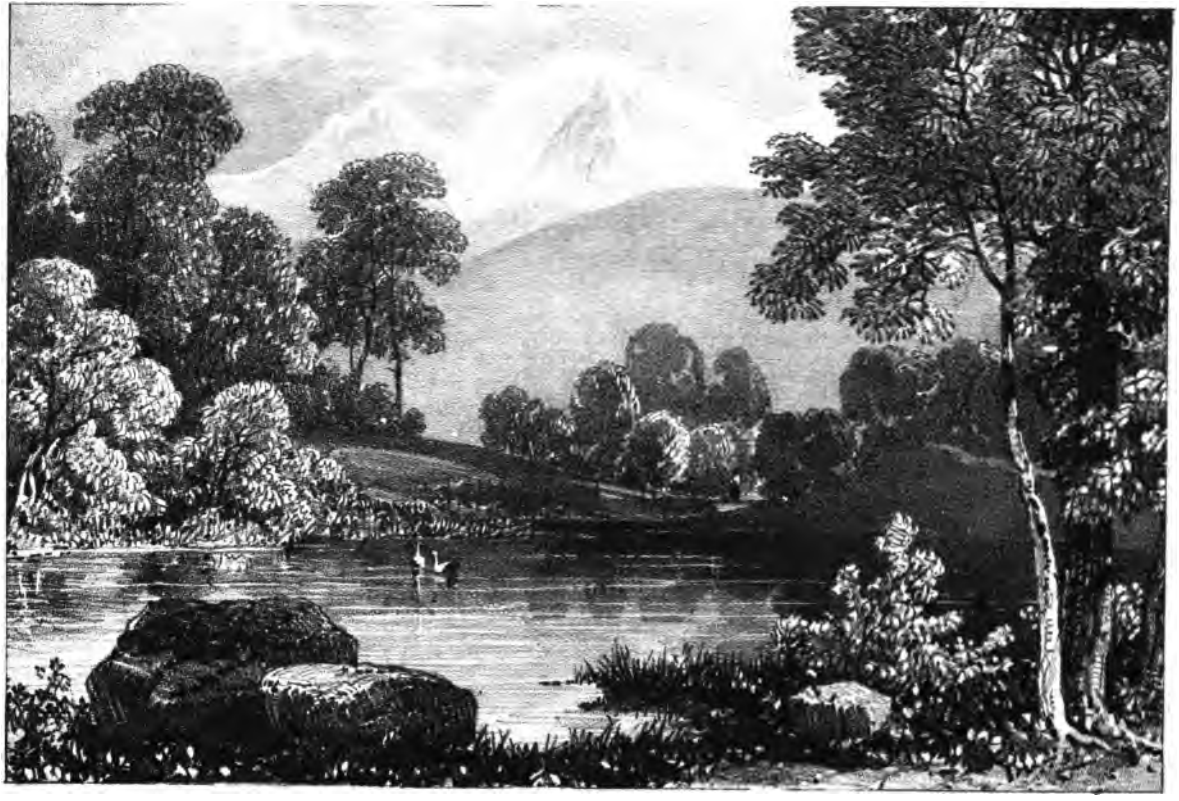

LAC DE CHEDE.

Drawn on Stone by J.D Harding from a Sketch by Birmann. Printed by C. Hullmandel.

ASCENT

TO THE

SUMMIT OF MONT BLANC.

CHAPTER I.

" Nature's bulwarks, built by time,
'Gainst eternity to stand:
Mountains terribly sublime!"

It was on passing the beautiful little Lac de Chêde on my way to Chamonix, early in June, that the " monarch of the Alps" first presented himself to me in that dazzling splendour with which he is clothed, when his blanched head, far above the thick " robe of clouds" enveloping his centre, reflects the brilliancy of the noon-day sun. The mind, at first lost in astonishment, and gradually recovering from its effects, dwells with admiration on the magnificent scene. The beholder then feels an earnest desire to reach the summit, which his eye can hardly distinguish from the light clouds that often flit around it; while the knowledge that the enterprise, though equally difficult and dangerous, is still prac-

ticable, increases the anxiety to achieve it. Who that has read the interesting account which the indefatigable De Saussure has given us, but must have felt an inclination to emulate him and his intrepid guides? Who that has perused the entertaining Letters of Captain Sherwill, but must have wished to visit glaciers where the most extraordinary combinations of ice and icy mountains, piled on each other in all the extravagance of fantastic irregularity, present scenes never yet surpassed in the stupendous works of nature?

It was at this moment that I formed the determination to attempt the ascent of Mont Blanc. The desire of exploring the glaciers of Buissons and Taconnay was not diminished, nor the resolution of proceeding to the summit of the mountain at all shaken, by a passage along the Mer de Glace, and a visit to the Jardin, an expedition of some difficulty; while the distinct and perfect view which I enjoyed from the summit of the Breven, of that immense extent of ice forming these glaciers, their yawning chasms and frowning precipices, their lofty pyramids of azure and the dazzling glare of their snows, seemed only to excite my impatience to realize the arduous undertaking I contemplated. But the season was not sufficiently advanced, and no guide was disposed to accompany me until

the end of July. I left Chamonix with regret, but with a determination to return, having obtained a promise from the Chef de guides that he would give me notice when the attempt might be made with a prospect of success.

The months of June and July were as favourable as I could possibly have wished, for bringing the glaciers into that state in which it is considered practicable to venture on them. Anxiously did I wait for the promised information which should summon me to Chamonix: it had not arrived at the end of July, and I did not think it necessary to repair thither uncalled.

At that very time, however, it was the fortune of two young Englishmen to make the ascent; and, had I been on the spot, it is probable I should have been of the party, and shared that honour and renown which is awarded to the discoverers of a new route. Mr. W. Hawes and Mr. C. Fellows left Chamonix on the 24th, were on the summit on the 25th, and returned to the Priory on the 26th July. To these gentlemen, all who in future may make the ascent are greatly indebted. By their judicious arrangements a route has been discovered which renders the latter part of the undertaking less dangerous, though it has made it more fatiguing, than it was before. In fact, after having passed one crevice on the other

side of the Plateau, there is no danger from avalanches, which, by the old track, were more to be dreaded than any thing else, after the Grand Plateau had been attained. Coutet, and one or two other guides, for some time had supposed it possible to follow a new course from the Plateau, by avoiding that dangerous part where their unfortunate companions were lost in 1820, and by going to the left of the Rochers Rouges, to wind between them and the Aiguille sans Nom, which is a part of the Mont Blanc du Tacul. They had not a sufficient number of men with them in the last expeditions to allow an exploring party to be detached from them. On this occasion, finding it was totally impracticable to ascend by the old route, and having a numerous cortêge, they despatched four of their number, who, after an absence of nearly two hours, appeared on the Rochers Rouges, having completely succeeded. The rest of the party followed immediately.

To these gentlemen, whom I had the pleasure of meeting in Geneva two days after their ascent, I am under great obligation for much valuable and useful information, and am gratified in having this opportunity of acknowledging it. A minute description of their route, and the appearances which attracted their notice, afforded me the means of observing those changes which had

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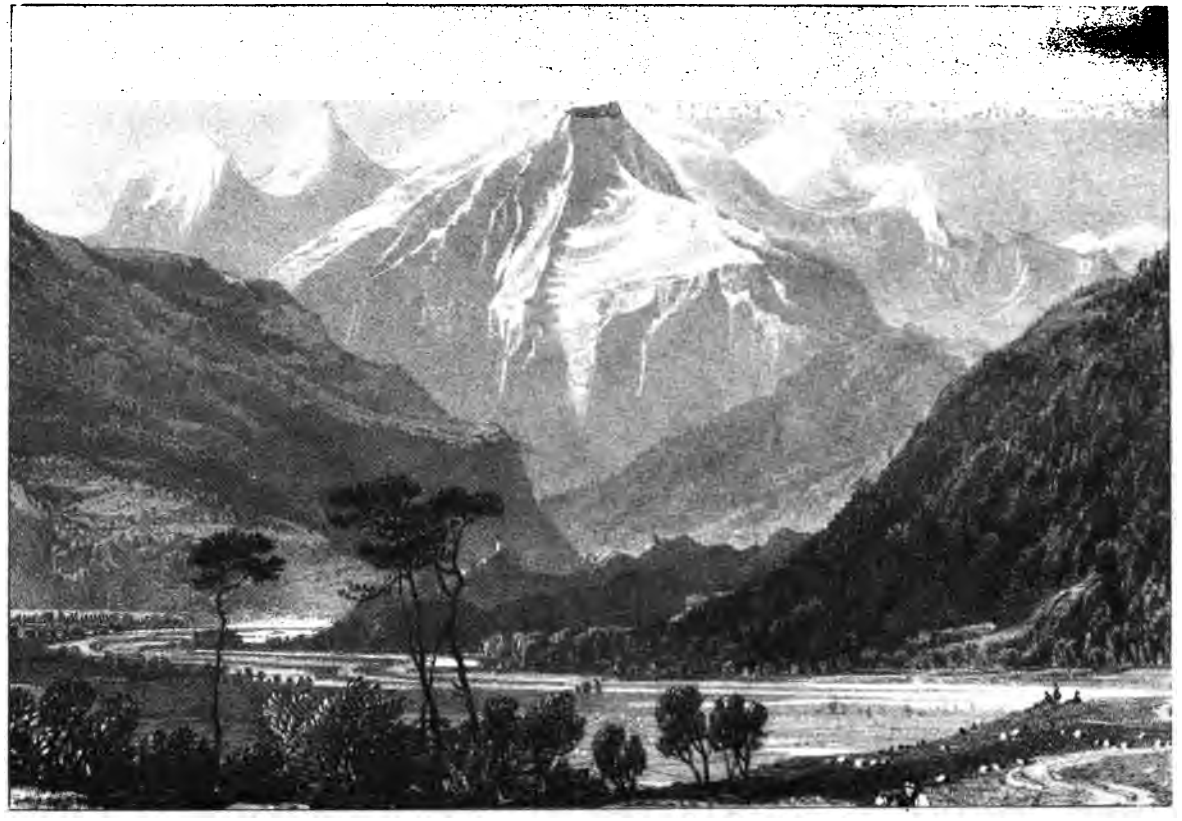


VIEW of MONT. BLANC from SERVOZ.

Drawn on Stone by J. D. Harding from a Sketch by Birmann. Printed by C. Hullmandel.

taken place during the few days intervening between our ascents.

Having learnt the practicability of ascending, I determined to lose no time in repairing to Chamonix, and my preparations were soon made. Some warm clothing, a telescope, and thermometer, were the sole contents of my haversack. I endeavoured to procure a barometer and an hygrometer, but without success. I did not much regret the want of them, not professing to make my ascent for any scientific object, feeling that I could add very little to the stock of existing knowledge. I regretted extremely, however, that I could not obtain a self-registering thermometer, in order that I might learn the degree of cold on the glacier during the night.

On the 5th August I arrived in the valley. For several weeks the weather had been most beautiful, during which period not a cloud had sullied the blue arch of heaven, nor a mist shrouded the bright horizon; but this day the clouds gathered thick and lowering, and rain fell in torrents, pouring down a deluge the whole of the afternoon and the ensuing night. Next morning the mountain I was about to climb was no longer visible, being closely wrapped in a veil of dark vapour. The wind blew with great

violence, sweeping through this narrow valley in awful gusts, and the weather wearing a most threatening and stormy appearance, seemed to put a bar to my hopes, and to augur a difficult, and perhaps unsuccessful, attempt. Indeed the guides seemed to despair, and almost concluded that it would be too dangerous, after this storm, to encounter the glacier; at all events, that it would be impossible to do so before ten or fourteen days should have elapsed. Then it might be too far advanced in the season for an undertaking at all times so very perilous. However inconvenient it might be, however unpleasant to remain in Chamonix for that period, still I was determined to do so, rather than not be on the spot, to avail myself of the first favourable change in the weather. I had always a resource in contemplating the dangers I should have to undergo —the difficulties to encounter; and I never could suffer my spirits to be depressed, while picturing to myself the beauties of the glaciers over which I should pass: and, above all, the anticipation of the pleasure which is derived from success produced in my mind a most animated excitement. Besides, the constant change of visitors to the valley affords so great a variety of character, and so great a source of amusement, that it would be hardly possible for ennui

to throw its power over even the most dejected of mortals.

On the subject of dangers, every one talked in terms tending to dissuade me from my purpose: the guides, to try my resolution—the wives and friends of these men, through an apprehension of the consequences to themselves. They doubted my having strength requisite to endure the fatigue, the effects of the rarefied atmosphere, and the cold; as well as my having nerve to encounter and surmount the difficulties of the ascent, not having trained myself for such an expedition by mountain excursions, by climbing and accustoming myself to precipices. When they found this made no impression, they represented to me, that the person who started with an intent to reach the summit ought to make up his mind to lose his life in the attempt, rather than return unsuccessful; a pretty strong argument to intimidate me; but my determination was taken. Without vanity I do assert, that no man can ever succeed who has not formed such a determination: he never will have strength of head and heart to sustain him through an undertaking of so much difficulty and danger. Some have made their wills before starting, and all left such directions regarding

their property as if they were persuaded they never should return.

Early on Tuesday morning, Devouassoud and Coutet entered my chamber, and announced that the wind had changed, the weather become fine, and if it lasted the day, would most certainly continue so during the day following. In these mountainous districts, the guides are very good barometers, and seldom give a wrong indication of the approaching weather. With great joy did I hear them say that we should start the next morning: it was most gratifying intelligence to me, having been led to expect a ten days sojourn in the valley before the ascent could be attempted. There were many arrangements to make during the day: my guides were to be selected, the provisions * to be procured, and the other necessary measures taken for rendering

* Our stock consisted of the following articles: twenty bottles of vin ordinaire; one bottle of champagne; one bottle and a half of vinegar; two bottles of brandy; one bottle of sirop de vinaigre; two large pieces of veal; two large pieces of mutton; six sausages; sixteen chickens; two large fowls; several loaves of bread; six lemons; sugar; a large quantity of cheese; raisins and French plums. In addition to these provisions, the guides carried a hatchet, strong cords, charcoal, a couple of sheets, and a blanket; straw, they thought, would be useless, as we should find enough left on the rock by Mr. Fellowes's party. Each guide was provided with a

MONT BLANC and the VALLEY OF CHAMONIX from the COL DE BALME.

Drawn on Stone by J.D. Harding from a Sketch by Birmann — Printed by C. Hullmandel.

our progress as comfortable as possible: it was therefore not a day of idleness.

Many of the guides who had desired to be chosen, in the event of my fulfilling my intention, now declined to proceed with me. The Chef de guides fixed three o'clock for enrolling those who would volunteer; when that hour came, I could not fill up my list of six: many were found wanting, some bringing for excuse that their wives would not allow them, others that their mothers, sisters, children, interfered; and I could only find four who were determined to accompany me. In the evening I made up the number; but again two of them changed their minds; and at ten o'clock only had I my six guides, certain of setting off in the morning. Two young men of the village, one a naturalist, the other performing a sort of apprenticeship for the situation of a guide, strenuously begged to be allowed to join my party. They were both led by curiosity, and finding that the guides were not averse to their accompanying us, I granted permission. Our number, therefore, amounted to nine*, six guides, the two villagers, and myself.

number of double-headed screws, to be fixed into the heel of his shoes on arriving at the glacier.

* The following are the names and designations of my guides:

Among the concourse of visitors to Chamonix of all nations, I could find but one who was at all willing to accompany me. He certainly would have been glad to have done so, but a promise interfered with his desires. I must, however, say, that all were most anxious to render me every assistance in their power. The evening was beautiful, and with several of my countrymen, standing on the small hillock which faces the village, on the other side of the river, I watched with peculiar interest the rays of the sun slowly retiring up the mountain, and decking it with splendour. To view the whole valley in perfection, I recommend this spot: It commands both ends, embraces the line of

1. Joseph Marie Coutet, married, aged 36; had been up seven times; was nearly killed by the avalanche in Dr. Hamel's attempt. He was my chief guide, and in very dangerous places always took the lead.

2. Julien Devouassoud, married, aged 37; up once; was one of Dr. Hamel's guides; saved Coutet, being precipitated into a crevice with him. His duty was to remain attached to my person. In his prudence and presence of mind I firmly relied. His bravery is well known.

3. Jean Pierre Tairraz, le jeune, up twice; aged 40; single.

4. Jacques Simond, married, aged 40; never up.

5. Michel Favret, widower, aged 31; up once.

6. Jean Marie Coutet, married, aged 49; never up.

Auguste Couttet, aged 19; a villager; never up.

Michel Carrier, aged 30; never up; keeps a Cabinet d'Histoire Naturelle; a clever intelligent man.

MONT BLANC FROM THE PRIORY OF CHAMONIX.

Drawn on Stone by J.D. Harding from a Sketch by Birmann.—— Printed by C. Hullmandel.

Aiguilles and Mont Blanc on the one side, and the whole of the Breven and Aiguilles Rouges on the other. Some villagers joined us, and by telling anecdotes of their companions, amused us so highly, that we thought not of retiring, until the dew of evening, falling heavily, warned us to seek shelter.

Most of the guides, we learnt, are desirous of making the ascent, but either through the interference of their families, as has been before observed, or afraid of the rarefied air and the fatigue, they do not attempt it. The first question generally asked by the visitors of all nations, and invariably by the Fair sex, is, "Have you been up the mountain?" They all know the value of the recommendation, if they have been, and with great pride answer in the affirmative: those who have not, attempt to evade the question, or reply dejectedly, conscious that not half the reliance will be placed on them as on their more intrepid and experienced associates.

Six o'clock was the time fixed for starting, and every man was desired to be in attendance before that hour, but I could not get them together at that time; four had to part from their wives and children, and all of them from relatives; when they did join us, it was with a cortêge,

some crying, some upbraiding me with tempting those who formed their only support to sacrifice themselves to my curiosity and pleasure; many a bitter tear flowed, and more than one heart waxed heavy, on the morning of the 8th. Two or three of my countrymen were kind enough to accompany me through the weeping crowd assembled on the bridge; and one carried his attention so far as to continue with me to Coutet's cottage, in the village of Les Pélérins, the appointed rendezvous. Coutet left us, but in a few moments returned, arrayed in an old hussar jacket with scarlet embroidered vest, the uniform he wore while serving as a chasseur à cheval in the French army. This costume, now highly honoured, is never exhibited to the admiring eyes of the fair Chamoniards, except in an expedition up Mont Blanc. He brought out with him a number of straw hats with broad brims, all celebrated for having been more than once on the summit, and presented them to me, in order that I might select one in exchange for that I wore.

Having made my choice, I mounted the mule provided for me, and at seven I left this village, and immediately began to ascend through the thick pine wood which surrounds the cottages. Among the trees we occasionally observed groupes

of females parting from their friends. After an ascent of an hour and a half up the mountain, which is bounded on one side by the glacier de Buissons, and on the other by the ravine through which the torrent flows, that afterwards forms the cascade of Les Pélérins, we arrived at the Chalet de la Para, a summer chalet belonging to the old guide Favrèt, and the last inhabited spot on the mountain. From this we ascended a steep path for about an hour, and arrived at the Pierre Pointue, where I was obliged to leave the mule.

Thence we proceeded by a narrow footway or ledge, in the face of a cliff, in some places perpendicular, and in others overhanging the abysses below. This track is partly natural, but in some places improved by the people of the valley; and a tolerably accurate idea of it may be formed, by imagining that against a precipice of above a thousand feet in height, a wall of two feet thick was built about half way up, and the path consisted merely of the space on the top of the wall, which was frequently so narrow, that we were under the necessity of advancing sideways, with our faces towards the rock, because the ordinary breadth of a man's shoulders would have thrown the balance of his person over the edge of the precipice. The track was also slippery, and covered with loose

stones, the crumbling materials of the decaying rock, around points of which we sometimes wound, now climbing, and then with greater difficulty descending, or rather letting ourselves down from one pinnacle to another; so that this part of our journey, though less perilous than our subsequent ascents and descents in the icy precipices of the glaciers, was yet sufficient to try the nerves of a novice, and to require the utmost caution in the movements of even the most experienced of the guides*.

* The admirable author of Waverley, with that happy talent, in the power of which he stands unrivalled, has, in one of his latest delightful productions, and in those glowing colours with which he alone can equally embellish the picture, whether its subject be the wild beauty of the Highland glen, or the sublimity of the stupendous Alpine precipice, pourtrayed with such wonderful truth and feeling, the scene which I have attempted to describe, and which is indelibly imprinted on my memory, although my description of it may be tame and common-place, that I cannot resist the impulse to quote from "*Anne of Geierstein*," (vol. i. chap. 2.) the scene where the hero of the tale, Arthur de Vere, leaving his father on the broken pathway, proceeds alone to explore the cliff, and so nearly meets the fate to be apprehended by him, who, from such giddy heights, ventures to "cast his eyes below."

"——— I'll look no more,
"Lest my brain turn, and the deficient sight
"Topple down headlong."

"But without listening to the prohibition, Arthur had commenced his perilous adventure. Descending from the

Having passed the cliff, we next commenced ascending the " Moraines," an accumulation of

platform on which he stood, by the boughs of an old ash-tree, which thrust itself out of the cleft of a rock, the youth was enabled to gain, though at great risk, a narrow ledge, the very brink of the precipice, by creeping along which he hoped to pass on till he made himself heard or seen from the habitation, of whose existence the guide had informed him. His situation, as he pursued this bold purpose, appeared so precarious, that even the hired attendant hardly dared to draw breath as he gazed on him. The ledge which supported him seemed to grow so narrow as he passed along it, as to become altogether invisible, while sometimes with his face to the precipice, sometimes looking forward, sometimes glancing his eyes upward, but never venturing to cast a look below, lest his brain should grow giddy at a sight so appalling, he wound his way onward. To his father and the attendant, who beheld his progress, it was less that of a man advancing in the ordinary manner, and resting by aught connected with the firm earth, than that of an insect crawling along the face of a perpendicular wall, of whose progressive movement we are indeed sensible, but cannot perceive the means of its support. And bitterly, most bitterly, did the miserable parent now lament, that he had not persisted in his purpose to encounter the baffling and even perilous measure of retracing his steps to the habitation of the preceding night. He should then, at least, have partaken the fate of the son of his love.

" Meanwhile, the young man's spirits were strongly braced for the performance of his perilous task. He laid a powerful restraint on his imagination, which in general was sufficiently active, and refused to listen, even for an instant, to any of the horrible insinuations by which fancy augments actual danger. He endeavoured manfully to reduce all around him

the rocky fragments, gravel, and earth, which, falling from the precipices overhanging the

to the scale of right reason, as the best support of true courage. 'This ledge of rock,' he urged to himself, 'is but narrow, yet it has breadth enough to support me; these clifts and crevices in the surface are small and distant, but the one affords as secure a resting-place to my feet, the other as available a grasp to my hands, as if I stood on a platform of a cubit broad, and rested my arm on a balustrade of marble. My safety, therefore, depends on myself. If I move with decision, step firmly, and hold fast, what signifies how near I am to the mouth of an abyss?'

"Thus estimating the extent of his danger by the measure of sound sense and reality, and supported by some degree of practice in such exercise, the brave youth went forward on his awful journey, step by step, winning his way with a caution, and fortitude, and presence of mind, which alone could have saved him from instant destruction. At length he gained a point where a projecting rock formed the angle of the precipice, so far as it had been visible to him from the platform. This, therefore, was the critical point of his undertaking; but it was also the most perilous part of it. The rock projected more than six feet forward over the torrent, which he heard raging at the depth of a hundred yards beneath, with a noise like subterranean thunder. He examined the spot with the utmost care, and was led by the existence of shrubs, grass, and even stunted trees, to believe that this rock marked the farthest extent of the slip or slide of earth, and that, could he but round the angle of which it was the termination, he might hope to attain the continuation of the path which had been so strangely interrupted by this convulsion of nature. But the crag jutted out so much as to afford no possibility of passing either under or around it; and as it rose several feet above the position which Arthur

glacier, are, by its irresistible though imperceptible motion, carried along its sides, while

had attained, it was no easy matter to climb over it. This was, however, the course which he chose, as the only mode of surmounting what he hoped might prove the last obstacle to his voyage of discovery. A projecting tree afforded him the means of raising and swinging himself up to the top of the crag. But he had scarcely planted himself on it, had scarcely a moment to congratulate himself on seeing, amid a wild chaos of cliffs and wood, the gloomy ruins of Geierstein, with smoke arising, and indicating something like a human habitation beside them, when, to his extreme terror, he felt the huge cliff on which he stood tremble, stoop slowly forward, and gradually sink from its position. Projecting as it was, and shaken as its equilibrium had been by the recent earthquake, it lay now so insecurely poised, that its balance was entirely destroyed, even by the addition of the young man's weight.

"Aroused by the imminence of the danger, Arthur, by an instinctive attempt at self-preservation, drew cautiously back from the falling crag into the tree by which he had ascended, and turned his head back as if spell-bound, to watch the descent of the fatal rock from which he had just retreated. It tottered for two or three seconds, as if uncertain which way to fall; and had it taken a sidelong direction, must have dashed the adventurer from his place of refuge, or borne both the tree and him headlong down into the river. After a moment of horrible uncertainty, the power of gravitation determined a direct and forward descent. Down went the huge fragment, which must have weighed at least twenty ton, rending and splintering in its precipitate course the trees and bushes which it encountered, and settling at length in the channel of the torrent, with a din equal to the discharge of a hundred pieces of artillery. The sound was re-echoed from bank to

by the labouring and friction of the ice they are broken, rounded, and heaped up into mounds of considerable height, forming barriers between the precipices and glaciers. This mass of debris, being loosely thrown together, and mixed with ice, is very difficult of ascent.

The wood which was required during our expedition was here collected, each guide taking his share. While this was doing, some of the party rolled immense blocks of granite, numbers of which lie on the Moraines, down a precipice, into a deep and narrow hollow, formed by the glacier and part of the mountain; the noise produced, and its echo many times repeated, very near equalled a lengthened peal of thunder. Continuing our course up the Moraines, we again came upon the rock, and soon arrived at our breakfast station, at the foot of the Aiguille du Midi, and behind a large rock called Pierre Fontanêt, or the Pierre à l'Echelle.

This spot is at some distance from the pasture land of the mountain, but during our repast we

bank, from precipice to precipice, with emulative thunders; nor was the tumult silent till it rose into the region of eternal snows, which, equally insensible to terrestrial sounds, and unfavourable to animal life, heard the roar in their majestic solitude, but suffered it to die away without a responsive voice."

were surprised by a visit from some sheep and goats. They had followed us. That the latter could have made their way over the precipices to reach us was not extraordinary; but I did not believe that sheep would have had the power or courage to climb and leap from rock to rock, passing over many a deep abyss, which they of necessity must have done. At this point there is also a remarkably powerful echo, to prove which Devouassoud fired a pistol. We were almost deafened with the report: at first the loud reverberation produced a wonderful effect; then beating about from mountain to mountain, it died away in the softest sound.

It was near mid-day, and anxious to get in good time to the Grands Mulêts, I hurried the guides, who were dividing the wood, and squabbling in good humour, each desirous of getting as light a burden as possible. None of them had as yet carried any, as their relations or friends, on all such occasions, bring their haversacks to this spot. Here we left half of these auxiliaries; but the remainder, knowing that we intended to come down, if practicable, on the second day, an arrangement which would expose us to very great and additional fatigue, were unwilling to give up their loads, while, by proceeding some distance on the ice, they sought

to preserve the strength of their friends, and keep them fresh as long as possible. One or two of the guides, however, had employed other persons to carry their loads, and paid very dearly for this indulgence to their own shoulders. Indeed this is necessary, the ascending the Moraines and rocks being very fatiguing, even without a load*.

At twenty minutes before twelve we left this station, and ascending a little further, arrived at the edge of the glacier. We had not much difficulty in getting on it, but to an inexperienced eye it would seem impossible to do so, or at all events to proceed any great distance along it, from the masses of ice which are piled on one another, and the deep and wide fissures which every moment intersect the path pointed

* "When we had been some time at rest," writes Dr. Clarke, "I was desirous of examining the rate of the pulse; and found the pulse of one of the oldest porters, Coutet le Chamois, to beat eighty-four; our captain, Coutet, eighty-four; my own, eighty-eight; the guide, Simeon Devouassou, ninety-two; Pierre Tairraz *le jeune*, one hundred and two; and Captain Sherwill, one hundred and eight. This result surprised me a good deal; I had expected to find the pulse of the strongest and most muscular subjects least accelerated. This, however, did not appear to be the case. Pierre Tairraz *le jeune*, a young Hercules in figure and muscle, had a pulse fourteen beats quicker than my own; yet the observation was made with care, and I have no doubt of its accuracy."

out as that which is about to be proceeded in. Here the skill and knowledge of the guide is shown: the quickness and ease with which he discovers a practicable part is quite extraordinary; he leads the way over places where one would believe it impossible for human foot to tread. We passed among the remains of innumerable avalanches, which had been long accumulating, and formed a most uneven and tiresome footway.

An extended plain of snow now presented itself, here and there covered with masses of broken ice; sometimes a beautiful tower of that substance raised its blue form, and seemed to mock the lofty pointed rocks above it; sometimes an immense block, its perpendicular front broken into pinnacles, now bearing a mass of snow, now supporting long and clear icicles, looked like some castle, on whose dilapidated walls the ivy, hanging in clustering beauty, or lying in rich and dark luxuriance, was, by the wand of some fairy, changed into the bright matter which now composed it.

From these magnificent scenes, and over this plain, we hurried as speedily as circumstances would allow, to avoid those dangerous avalanches which fall continually from the Aiguille du Midi, sweeping every thing before them.

The pyramids of ice which rose on either side of us, in all the sublime variety of nature, forming a thousand different shapes, kept me riveted to the spot; and as they increased in number and size, I became lost in admiration, unwilling to leave them and move forward, until the voice of the guide exhorted me to hasten from the dangers with which I was momentarily threatened.

It was the avalanche alone which we had hitherto to fear, but now new dangers arose, from the crevices, those deep clefts in the ice formed by the constant movement of the body towards the valley, which separates immense parts of it. The higher masses, meeting with some slight opposition, remain stationary; the lower, proceeding in their course, widen the breach; and thus throughout the whole glacier, in every direction, are formed tremendous cracks.

The men who had accompanied us from the Pierre Fontanêt would proceed no farther. Here we rested ten minutes in arranging the line of march, and adjusting the cords. The first two guides were tied together, at a distance of six yards; the third and fourth in like manner; then myself, the rope fastened round my chest, each end being tied to a guide, Coutet leading, and Devouassoud being behind me; the na-

turalist and the boy followed, also secured together. All being ready, and the order of march arranged, we bade adieu to those who were to return, and shaking each other by the hand, swore to keep faithful, and not desert each other in any danger or difficulty which might occur, declaring that all distinction of person should cease—that we would be brethren in this enterprise.

The benefit of being secured to each other by ropes is shown almost every instant, as not a minute passed without some one of the party slipping on the ice; and falling, had he not been linked to another, would have glided into some crevice, and inevitably have perished. We were surrounded by ice piled up in mountains, crevices presenting themselves at every step, and masses half sunk into some deep gulf; the remainder, raised above us, seemed to put insurmountable barriers to our proceeding: yet some part was found where steps could be cut with the hatchet; and we passed over these bridges, often grasping the ice with one hand, while the other, bearing the pole, balanced the body, hanging over some abyss, into which the eye penetrated, and searched in vain for the extremity. Sometimes we were obliged to climb up from one crag of ice to another, sometimes

to scramble along a ledge on our hands and knees, often descending into a deep chasm on the one side, and scaling the slippery precipice on the other. No men could be in higher spirits than my guides, laughing, singing, and joking; but when we came to such passes, the grave, serious look which took place of the smiling countenance, was a sure indication of great danger: the moment we were safely by it, the smile returned, and every one vied in giving amusement to the other. These were situations in which the nerve was put to a severe test; for however stout the heart may be, if giddiness should take possession of the brain, the most determined courage would be of little avail. Indeed it is exceedingly difficult to look into these depths, which must be passed over, and not be unnerved, knowing that if the head fails destruction is inevitable. I had been unaccustomed to look into such danger, but found my head could bear it, and with steady eye I could examine the beautiful abyss below me. Once more the guides expressed fears that I should yield to the fatigue, reverting to the old theme, my having undergone no sort of training; but the strong determination I had formed to reach the summit was of more service to me than all the preparations I could have made. With this

resolution, no danger appalled me, no fatigue overcame me.

" Dans ce périlleux voyage
" L'abyme à tout instant s'entrouve sous mes pas ;
" Mais un puissant espoir exalte mon courage,
" Et le danger lui-même a pour moi des appas."

A large mass of ice now opposed our progress: we passed it by climbing up its glassy sides. It formed a bridge, over a fissure of great width, which would perhaps otherwise have put an end to our expedition, as we could discover no other way of crossing it but by this bridge. After winding some time among chasms and enormous towers, we arrived at the edge of another crevice, over which we could see but one bridge, that not of ice, but of snow only, and so thin that it was deemed impossible to trust to it. A plan was resorted to which enabled us to pass over in safety: our " batons" were placed on it, and in so doing the centre gave way, and fell into the gulf; however, enough remained on each side to form supports for the ends of these poles, and nine of them made a narrow bridge, requiring great precaution and steadiness to traverse. Other crevices were passed over, on bridges of snow, too weak to allow of walking on, or too extended to admit this application of

the poles. A strong guide managed to creep over, and a rope being tied round the waist of a second, who lay on his back, he was in that position pulled across by the first. In this manner the whole party were drawn singly over the crevice. The snow was generally soft, so that the head and shoulders, ploughing a furrow, were covered with it. The passage of these bridges, though difficult and dangerous, excited the merriment of the party, and a loud laugh accompanied each man, as he was jerked over the gulf yawning beneath him.

Again the glacier presented its beautiful and varied scenes, every moment the eye meeting with some new combination of icy grandeur. The crevices, numerous and deep, broken and full of hollows or caves, surpassed any thing I could have conceived. Some of these grottoes were accessible; others, of which the entrance was blocked up by pillars studded with ornaments of ice or snow, could only be examined externally. We entered one so beauteous in construction and embellishments, that fancy might picture it to be the abode of the "Spirit of the mountain." It was large, its roof supported by thick icicles of blue or white, varying into a thousand different shades: on the floor were vast clumps of ice, resembling crystal flowers, formed by the freezing

of the drops of water which are perpetually falling: in the centre, a pool of water, whose refreshing coolness and exquisite clearness almost excited thirst, stood in its blue basin: at the further end fell a cascade, into a sort of spiral well formed by it, and, in its passage through it, produced a sound much like that of water boiling in some confined vessel. There are many caves, but this description may in some degree apply to all. They are formed by the water falling, and excavating a passage for itself: the ice melts away on all sides, and it soon becomes such as I have described it.

Arriving near the base of those rocks called the "Grands Mulêts," we found that a chasm of eighty feet in width separated them from us*.

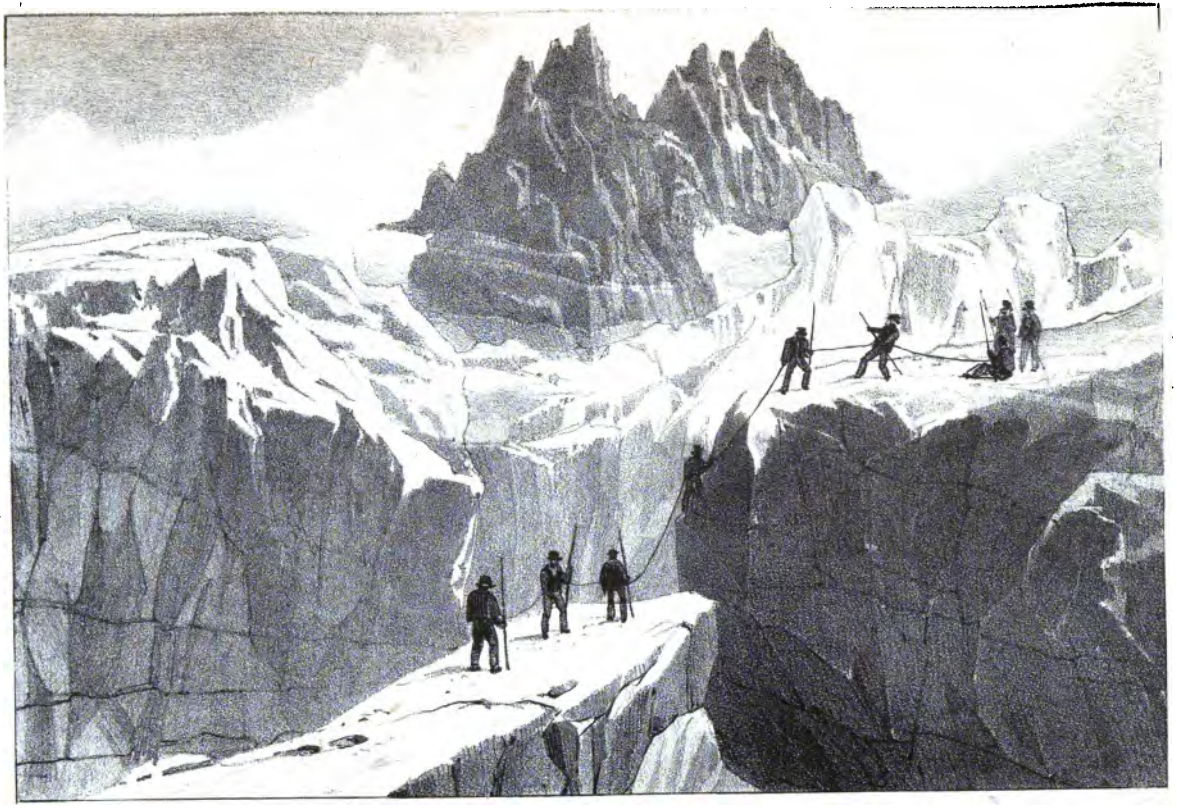
* The Count de Lusi, a Prussian officer of distinction, nearly succeeded in reaching the summit on the 15th September, 1816, but found it necessary to retrace his steps when within seventy toises of it, from the unfavourable state of the weather, and the lateness of the hour. He was unable to get upon the Grands Mulêts in ascending, and had to pass the night in a hole dug in the glacier. But I will give his own description.

"At last, towards six o'clock, we arrived at the other side of the glacier, and close to the rock of the Grands Mulêts, where De Saussure and others had before slept, and on which it was also our intention to bivouac for the night. Imagine what must have been our surprise and chagrin, when we found an immense crevice open around it! All our attempts to pass this were fruitless: we were obliged to leave it, and pro-

We proceeded up an acclivity forming a narrow neck of ice, but at its termination a wall opposed us: on either hand yawned a wide and deep crevice, and it appeared that there was no advancing without climbing this perpendicular mass of twenty feet in height. The neck we were standing upon overhung a gulf formed by the chasm and crevices, the very sight of which was appalling. The wall met this neck with an angle formed by these two crevices, which con-

ceed further to the right, along the glacier, in search of a spot which would suit our purpose. It was not an easy thing to find one which would be at the same time sheltered from the wind and protected from avalanches. We succeeded, however, in finding a small plateau, having a crevice both for ditch and rampart.

"I immediately caused a hole to be dug in the snow, about ten feet long, six broad, and four deep, in which the small quantity of straw we had brought with us was spread out; over it we placed our batons, and with sheets made a kind of tent, open at one end; before this opening we formed a level space for the chafing-dish, not with the intention of warming the interior of this hole, but to melt the snow necessary for our beverage. This being arranged, we supped, I with very little appetite, having wine and water, mixed with spices, to quench our excessive thirst. Brandy occasioned such a nausea, that I could not swallow it; and, although accustomed to the constant use of my pipe, I experienced such sickness and disgust on attempting to smoke, that I was obliged to lay it aside. I slept little, for during the night we rose alternately, and, getting out of the tent, ran about on the glacier to warm our feet."



SCALING A WALL OF ICE.

Drawn on Stone by J. D. Harding from a Sketch by J. Auldjo. Printed by C. Hullmandel.

tinued on each side of it, the angle coming to a most acute and delicate point. No time was to be lost: we were standing in a very perilous situation, and Coutet commenced cutting steps on the angle with his hatchet, and after great labour, and considerable danger, in the execution of his purpose, got to the top, and was immediately followed by another guide. The knapsacks were then drawn up, and the rest of the party after them. In ascending this wall, being partly drawn up, partly clambering, I stopped for an instant and looked down into the abyss beneath me: the blood curdled in my veins, for never did I behold any thing so terrific. I have endeavoured, in a sketch which the singularity and peril of our position induced me to take, and from which Mr. Harding has been able to make a very interesting drawing, to represent the scaling of this wall. The great beauty of the immense crevices around us, so deep, so bright, that the imagination could hardly measure them, excited not only my admiration, but even that of the guides, accustomed as they were to such scenes.

Safely on the top, on looking around, we discovered that these large crevices extended on each side to a very great distance, the plane of the wall sloping from the upper to the lower

crevice with an inclination which rendered walking on it very perilous. Some proposed to return to the commencement of the neck of ice which we had passed, and making a circuit from it, to get to the base of the "Grands Mulêts," on the other side of the great crevice, and climb up the rock: others were for proceeding, and their advice was followed. Walking with the greatest caution, in steps cut with the hatchet, we moved on very slowly: the ice was slippery, and a false step might have endangered the life of more than one individual. The wall now widened, but the slope became more inclined. Taking my steps with the greatest care, I could not prevent myself from slipping; as the space became wider I became less cautious, and while looking over the edge into the upper crevice, my feet slid from under me: I came down on my face, and glided rapidly towards the lower one: I cried out, but the guides who held the ropes attached to me did not stop me, though they stood firm. I had got to the extent of the rope, my feet hanging over the lower crevice, one hand grasping firmly the pole, and the other my hat. The guides called to me to be cool, and not afraid;—a pretty time to be cool, hanging over an abyss, and in momentary expectation of falling into it!

They made no attempt to pull me up for some moments, but then desiring me to raise myself, they drew in the rope until I was close to them and in safety.

The reason for this proceeding is obvious. Had they attempted, on the bad and uncertain footing in which they stood, to check me at the first gliding, they might have lost their own balance, and our destruction would have followed; but by fixing themselves firmly in the cut step, and securing themselves with their batons, they were enabled to support me with certainty when the rope had gone its length. This also gave me time to recover, that I might assist them in placing myself out of danger: for it is not to be supposed that, in such a situation, I did not lose, in a great degree, my presence of mind. These were good reasons, no doubt; but placed as I was, in such imminent peril, I could not have allowed them to be so.

At some distance farther on we crossed the upper crevice, by placing our poles together as before, and in a few moments passed one of those circular holes in the ice which the guides call "moulins," formed by the water, in the same manner as the one in the cave mentioned before. In this instance we were above, and could not see the water, but heard it

making the noise, as already described. We saw that our way back to the Grands Mulêts (for we had passed them some distance) was easy, and drank a bottle of our wine, thankful that no further impediments lay between us and our sleeping quarters. The bottle was left, as a mark of our route, the first we had applied to that purpose.

Marching at an angle of 45° with the crevice we had succeeded in passing, we approached the rock. Another fissure was in our way: the leading guide plunged his baton into the bridge of snow over it; he then proceeded one step, and plunged again for the second, but his pole slipped from his hands, and fell through the snow into the gulf beneath; and he had only time to spring back on the ice, when the whole bridge which he was attempting to pass sunk into the abyss. The pole bounded from side to side of the crevice for a few seconds, and was then lost. The poor fellow was much distressed, and many plans were formed for its recovery, but none were deemed practicable, as the crevice was too deep. We left the spot, and soon finding another bridge, crossed it, and attained the rock, near the summit of which was to be our resting-place or encampment for the night, it being the only situation free from

The Grand Mulet

Drawn on Stone from a Sketch by J. Auldjo *Printed by C. Hullmandel*

the danger of the avalanches perpetually falling, or liable every moment to fall, in its vicinity.

There are two of these rocks, called the Grands and the Petits Mulêts, being the conical pointed summits of a precipice, rising almost perpendicularly near three hundred feet from the glacier on the one side, while on the other side, which we had now reached, the height of these summits or pinnacles is above one hundred feet, and we had to climb about three-fourths of that height to reach the only spot in which there was a platform, or level space, sufficiently extensive for our temporary abode.

This space consisted of a ledge or shelf about five feet wide, and perhaps fifteen in length, within about twenty feet of the summit of the pinnacle, and upwards of two hundred feet above the surface of the glacier below, as in climbing we had partly wound round the cone, so as to reach within a couple of feet of the front of the precipice looking towards Chamonix. It is exposed on three sides, having only a row of stones piled half a foot high along the edge of the precipice. The upper part of the rock rising into a pinnacle forms a back to the ledge on the fourth side, and shelters it from the north-east wind. I immediately scrambled to the

summit of the pinnacle, and raised a red handkerchief, prepared for the purpose, and concerted with our friends at Chamonix to be displayed as the signal of our safe arrival. It was exactly four o'clock, and the labours of the day being now terminated, we proceeded to make such arrangements as our situation admitted of, for the comfort of the night; a fire was lighted, some wine was warmed and distributed, and a change of apparel, with which all indulged themselves, was found extremely refreshing.

While Coutet, who always acts as cook in these expeditions, was preparing our dinner, I sat on the summit of the rock, perfectly astounded with the magnificent spectacle around me: magnificent indeed it is,—beautiful, and extensive. The panorama, the finest that could possibly be presented, embraces within its mighty grasp mountains than which there are none more sublime—masses of ice and snow vying with them in grandeur—valleys smiling in sunshine and verdure—the placid lake Leman, showing like molten silver—the far blue hills of Jura,—and forms a picture more varied than can be conceived, the effect of which was much heightened by the deep colour of the sky, and the clearness of the atmosphere.

I will endeavour to describe this panorama, beginning with Mont Blanc, the most prominent feature, which,

> " High o'er the rest, displays superior state,
> In grand pre-eminence supremely great."

Moving round from left to right, the Dôme du Goûté and its Aiguille first present their lofty points. Turning still more, that part of the valley of Chamonix lying towards the west is discovered far beneath, with the Breven on the other side. Behind that mountain, many peaks between it and the lake of Geneva rear their heads, in some places intercepting the view of the lake, from whose opposite shore rise the Jura, extending towards the right as far as the eye can reach, and the further distance behind this long chain melts into a line of blue vapour, scarcely to be distinguished from the horizon. On the right of the Breven appear the Aiguilles Rouges, hanging over the rest of the valley of Chamonix—beyond them the Buet—the Diablerets above Martigny—the Dent du Midi—and, still farther to the right, the Tête Noir and Col de Balme. Continuing the circuit towards Mont Blanc, some of the Aiguilles on the south side of the valley are seen, the

Aiguille du Midi being nearest, and facing the point of view. The Mont Blanc du Tacul and Aiguille Sans Nom complete the panorama, the glaciers du Buissons and Taconnay lying close around the Mulêts, and forming the foreground to the towering height of Mont Blanc, the first object which commands the attention, and the last to which it returns.

From the contemplation of this sublime picture I was called to my dinner. We sat in a row along the rock, and partook most heartily of every thing which our cook favoured us with. No sooner was the meal despatched, than preparations were commenced for forming our tent. I again climbed to the top of the pinnacle, and attempted to smoke, but the rarity of the air rendered the scent of the tobacco so powerful and disagreeable, that I was obliged to desist. I then amused myself by looking down upon Chamonix, and plainly saw, with the aid of my telescope, the people crossing the bridge. It was not long before the tent was in order. By placing the batons in a sloping direction against the rock which formed a back to our structure, and laying a sheet over them, we made a very comfortable covering, though it scarcely admitted of our sitting up under it. As was

expected, a good supply of straw had been left by the last party who had made the ascent, and this we found acceptable and useful.

The sun, now about to set, tinged with a purple of softest hue the whole scene below us, which, gradually deepening into a beautiful crimson, shaded every thing with its colour, the Jura seeming on fire, and the lake of Geneva reflecting the glow. Every moment, as the sun retired from the world beneath us, the hue shed by his departing rays became deeper, and then wore into a dull grey: the lake—the lower mountains, were soon hid in darkness, but we still enjoyed the presence of the god of day. Now the violet tint was on us, but the summit of the mountain was still burnished with a line of bright gold. It died away, leaving a bright lovely red, which, having lingered long, dwindled at last into the sombre shade in which all the world around was enveloped, and left the sky clear and deeply azure.

It was getting cold (the thermometer had descended to 45° Fahrenheit), and as we were to be early risers, I was not reluctant in preparing for my stony couch. I had the first place, Devouassoud next to me, and the rest of the guides, in a row alongside each other, lay as close as they could. I soon fell asleep,

though the thunder of the falling avalanches might well have kept me awake. In the middle of the night I awoke, but experienced none of the unpleasant nausea and sickness which have attacked others when sleeping on this rock, nor did the guides appear to suffer from any such feelings. A solitude and stillness prevailed which affected me more than any of the occurrences of the day, though they now crowded on my mind.

None of the beauties, none of the dangers, have made a more lasting impression on me than the awful silence of that night, broken as it was only by the loud crash of falling ice, echoing and re-echoing with thrilling sound in the death-like stillness.

The sky had become more darkly blue, and the moon shone in the softest brightness, the stars shedding a dazzling and brilliant lustre. The avalanches continued falling, but neither they, nor the reflection on the past day, nor the anxieties for the coming one, could keep me from sleep, into which I again sunk. But, before I did so, I sat up and looked at my companions, all sound at rest, thinking not of the dangers they had past, nor of those which they must meet with before the expedition they were engaged in could be finished. They slept

placidly, yet I longed to get out of the tent, to behold the wonderful scenery under the influence of the moonlight, but I could not have done so without awakening every one of my dormant guides, and I was unwilling to sacrifice their repose to this gratification. I laid me down, and it was not long before I participated in the sound sleep which they enjoyed, and, with the return of morn, was prepared to continue my journey.

CHAPTER II.

" Ye toppling crags of ice!
Ye avalanches, whom a breath draws down
In mountainous o'erwhelming! .....
I hear ye momently above, beneath,
Crash with a frequent conflict."

About three o'clock A. M. I was aroused from my slumber by the noise of the guides creeping from the tent, but felt very loth to leave my stony bed; however, they would not allow me to prolong my rest, and I was obliged to hurry into the cold atmosphere. I immediately examined the thermometer, which I had hung in an exposed situation, but some one of the guides had, in the meantime, removed it to a place where it was affected by the heat escaping from the tent. The mercury was at 35° Fahrenheit at a quarter past three. The sheet, however, which formed our tent, had been moistened by the heat within, and in the course of the night had been frozen, and was now quite hard.

The moon was shining with great brilliancy: the effect of its light upon the snow and

glaciers, which were visible to a great extent, was beautiful and soft. The stars seemed to be suspended far beneath the ethereal canopy, and shone without scintillation. The appearance of Mont Blanc was particularly grand and sublime, the deep indigo colour of the sky behind forming a strong contrast with the silvery brightness of the snow. The whole scene was of a deeply impressive nature; to enhance which the awful and unbroken stillness contributed in a great degree.

It was excessively cold, and I felt it much, although I had taken every possible precaution, in the way of clothing and fur gloves, to resist its force. Leaving part of the provisions, knapsacks, and clothes, which we had changed the night before, we started from the tent at half-past three, and soon descended to the ice, which was so hard that it received no impression from our steps. We endeavoured to get warm by the exertion of walking as fast as was consistent with the caution required in stepping on ice, but the attempt was vain, the cold was too piercing to be resisted, the snow collected on our shoes congealed, and severely affected the feet, while the whole frame was pervaded by a sense of pain, the effect of the intense cold,

probably rendered the more acute by the rarefaction of the atmosphere.

We now directed our course towards the part of the mountain called the Dôme du Goûté, walking obliquely up a gently inclined hill, and then arrived at a very steep mound of snow, up which we proceeded, in a zig-zag direction, until we reached the top. So slippery and hard was the ice, that we found it necessary to cut deep steps in it, every two or three paces remaining stationary, until fresh ones in advance were struck out, and thus the pain that we before experienced from the cold was greatly aggravated. During these pauses nothing broke upon the profound silence of the vast and chilling solitude, but the crash which the heavy stroke of the axe gave, as the guide plunged it into the ice. It was then that, as I gazed around, the contemplation of the wondrous and appalling spectacle, with which all that I ever had before seen sunk in comparison, filled the mind with awe and admiration, and conveyed to the soul feelings altogether new and sublime. This part of the glacier was full of immense fissures, but we either avoided them or passed along the broad banks of ice between which they lay.

Having now attained a small plain of snow,

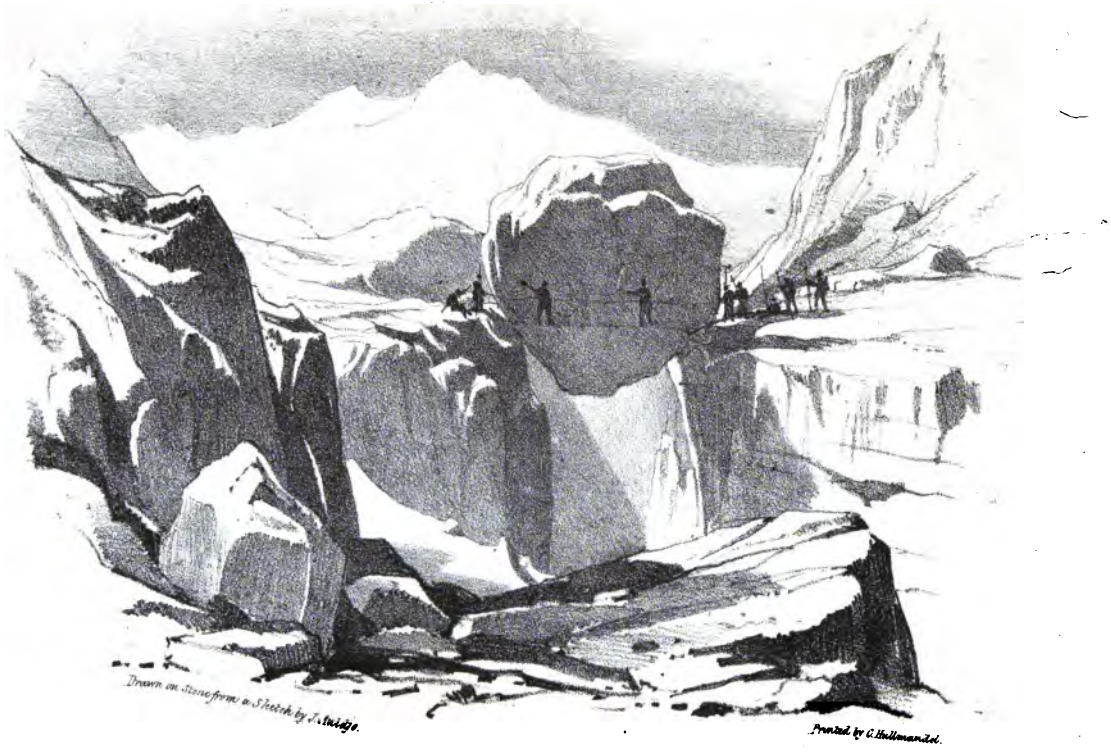
we should have soon crossed it, had it not been for the great débris of avalanches which covered it. We clambered round many very large masses, passing over some dangerous fissures, on bridges formed by pieces of ice which had fallen into them, in some instances descending, in others climbing up very steep and broken precipices*.

* "The chasm, though wide above, was not very wide beneath. The sides sloped down to a kind of serpentine chink from three to four feet wide, but of unknown depth. Our guide Julien, a thoroughly brave steady man, descended first to the edge of the chink, cutting holes as he descended. When at the brink it was still too wide to jump across, especially as the landing place on the other side was steep and slippery. Julien called to us above to hand down our ice-poles; accordingly four or five poles were handed down to him. These poles he placed from brink to brink, so as to make a little bridge, and then, after cautiously trying its strength, he slowly and steadily walked over to the opposite side. I must honestly confess that I did not at all admire this very ingenious contrivance, and did not much care to look on while Julien performed the feat. But the difficulty was not then at an end, for he had afterwards to climb up a high bank of snow so exceedingly steep that he could only ascend by cutting alternate holes for his feet and hands with the axe. This was a very singular and awkward affair; we stood watching him in breathless anxiety, expecting every moment that he would slip backward into the chasm. For his sake and our own we were heartily glad to see Julien safely emerge and fairly landed on the plane of snow above. He then let down his rope to assist and steady us in crossing the bridge of poles, and afterwards to help us in mounting the snow-bank. I am rather inclined to think that this passage

We passed one of a very difficult and perplexing nature. The side of the mass along which we were obliged to proceed was perpendicular. By clinging to the ice above the head, with the hand placed in a hole cut for the purpose, and stretching the feet from one resting place to another, also cut with the hatchet, we contrived to pass; but the footing was very slippery, uneasy, and dangerous. There was no bottom to be seen to the abyss below, and it certainly required a considerable exertion of nerve and determination to enable any one of us to get over such a spot. So perilous, indeed, was it, that had a false step or a slip been made, by any unlucky individual, it would have proved fatal to him, as well as to some of the guides, since the precarious hold afforded by their position could scarcely have enabled them to sustain the weight of any who should fall, and who must

was the most hazardous of the whole expedition; nor do I know whether the danger was greater of slipping off the tottering bridge into the chasm, or of falling backwards in climbing up the frozen bank of hard snow, where we had now and then to cling to the holes in the ice till our fingers ached with the grasp. Yet the aid afforded by these brave mountaineers is so prompt and so efficient, that the danger is by no means so great to the traveller as it would seem to be. To the guides, and to the guides only, belongs the merit either of courage or of dexterity in the matter." *Dr. Clarke's Narrative.*

Paſsage of a block of Ice in a Crevice.



Drawn on Stone from a Sketch by J. Stadge.

Printed by C. Hullmandel.

A dangerous Part of the Glacier

Drawn on Stone from a Sketch by J. Auldjo.

Printed by C. Hullmandel

therefore drag with him, into the abyss, those to whom he had been fastened for mutual security. The batons were first handed across, to the first guide who had passed, then the knapsacks, and we followed. Our situation was the more embarrassing, from our uncertainty of the strength of the mass of ice. We greatly feared that, by losing its equilibrium, poised as it was in the crevice, and by the weight of one or two persons on it, it might roll over, consigning to destruction those who might have the unhappy lot to be on it at the moment. The accompanying sketch is an attempt to represent our situation.

From this we passed along the edge of a crevice of great width for some distance, seeking for a bridge to cross it. We at length found one, crossed it, and, returning on the other side of the chasm, were enabled to distinguish the peril we had escaped, from the nature of the part we had been walking on, and where even now some of the guides stood. It was a shelf of snow, very thin, and hanging like a cornice over the crevice, as the sketch represents. It is but one instance of the countless hidden dangers which every moment threaten the life of the adventurer on the treacherous glacier.

Numerous blocks of ice, to which the term

"serac" is applied, covered the plain. These are large fragments of frozen snow, almost rectangular. They take their name from the resemblance they bear to a compact cheese, called "serac," which is made from skimmed milk, and pressed in rectangular cases. We now ascended a second steep acclivity of hard snow, to the second or little plateau, having the remains of avalanches on it, but not in such quantities, or in such masses, as on the former; we therefore passed it without much trouble. It was on this plateau, in this elevated station, that De Saussure slept on the second night of his ascent*.

* "At four o'clock in the afternoon, we attained the second of the three great plains of snow which we had to traverse, and on it encamped, at an elevation of 1455 toises above Chamonix, 1995 above the level of the sea, and 90 toises higher than the summit of the Peak of Teneriffe. We did not venture to the last of the plains, because it is exposed to avalanches, and the first of them is likewise liable to the same danger.

"It was the abode of coldness and silence, and when I looked back on the arrival of Dr. Paccard and Jacques Balma, towards the close of day, on these deserts, without shelter, without succour, and without even the certainty that men could live in these places to which they had ascended, in intrepidly following up their undertaking, I could not but admire their extraordinary courage and determination."—*De Saussure.*

My attention was now attracted by the sun rising, his rays falling on Mont Blanc and the Dôme du Goûté, clothing them in a variety of brilliant colours, quickly following one another, from a light tint of crimson to rich purple, and then to bright gold. These rapid alternations of reflected splendour, on a surface so vast and sublimely picturesque, presented a scene of dazzling brilliancy too much almost for the eye to encounter, and such as no powers of language could adequately pourtray.

From this plain we ascended a long steep hill, so steep indeed, that, following each other in the zig-zag direction in which we were obliged to climb, my head was generally on a line with the knee of the guide just before me. It was fatiguing, and dreadfully cold. In fact, so tedious was our progress in ascending these peaks of ice, that we all felt much exhausted, particularly as we had taken no refreshment since we started in the morning.

At last we attained the Grand Plateau, the largest of the plains of ice on the mountain, having the base of Mont Blanc on the further side, the Dôme du Goûté on the right, a precipice of ice and snow, with the Rochers Rouges, and the Mont Blanc du Tacul, on the left. The view from this situation is very fine:

these mountains, all rising directly from the plain, have a most striking appearance; but stupendous as they are, the gigantic mass we were about to climb towers high above and casts them into insignificance. The deception, in regard to the relative heights of the three mountains, which exists till the Grand Plateau is attained, has always surprised those who have reached it. Some large crevices intersect it, and others extend immediately under Mont Blanc, where the guides were lost in 1820. There is also a great accumulation of broken ice and snow from avalanches, on the part close to Mont Blanc and the Dôme.

The sun was shining on some parts of the plateau, but far from us. As we felt the cold bitterly, we agreed to stop at the commencement of the plain, in a crevice of from fifteen to twenty feet in width. In it we found a bridge of snow, which, on examination, was considered strong enough to bear the whole party at once; and from its position in the chasm, it afforded shelter from the north wind, which had blown strongly the whole morning, and was extremely piercing at this elevated situation. We therefore chose this bridge to breakfast upon. It was past seven, and we had been walking for more than four hours, without

Bridge of Snow where the Party Breakfasted

any cessation but the wearying and tedious halting which I have described. It was with pleasure that I found all anxious to stop in this comfortable crevice, comfortable compared with our previous exposure to the wind, but still very cold.

While breakfast was in preparation, I could not resist the temptation of wandering along the edge of the crevice, on the Plateau side. The depth of it was immense, its great breadth affording me an opportunity of making a more accurate and perfect examination than I had had before. The layers of ice forming the glacier, varying in colour from deep blueish-green to a silvery whiteness, with myriads of long clear icicles hanging from all the little breaks in the strata, presented a scene of the greatest beauty. Immediately to the right of our bridge, I found that the opposite side of the crevice formed an obtuse angle, from which a wall of ice passed along the side of the hill which we had last ascended. The side I was standing on joined an immense wall or precipice, which crossed the remainder of the space between the angle thus formed and the Mont Blanc du Tacul, forming a barrier to that part of the Plateau. From this point I had a view immediately under our bridge: the manner in

which it hung suspended, with all the guides sitting on it, many hundred feet from the bottom of this stupendous chasm, was a beautiful and curious, but at the same time an appalling sight. In one moment, without a chance of escape, the fall of the bridge might have precipitated them into the gulf beneath. Yet no such idea ever entered the imagination of my thoughtless but brave guides, who sat at their meal singing and laughing, either unconscious or regardless of the danger of their present situation.

The cold, as I have said, was excessive. I placed my thermometer against a baton, about two feet from the snow on the bridge, and the point at which the mercury rested was $18\frac{1}{4}$ degrees Fahrenheit, or — 6. Reaumur, at twenty minutes after seven A. M. The rarity of the air had not materially affected any of us, for the chickens which were produced for breakfast, though frozen*, were soon disposed of,

* M. De Saussure states, that at the Rochers Rouges the bread and provisions were completely frozen. However, the thermometer had not been below three degrees under the freezing point, and these provisions, shut up and covered in a basket, and carried on a man's back, ought to have been preserved from cold by the heat of his body. "I am persuaded," he continues, "that in the plain, at the same temperature, these aliments would not have been frozen, and

as well as some cheese, which was particularly relished. The negus made by Coutet the night before was pronounced to be real nectar. Besides, it had the advantage of being iced, crystals passing through it in a variety of directions while it was in the bottle, and a film formed instantly upon it when poured out into the glass. The time allotted for our repast was very agreeably spent, not one of the party regretting his having engaged in this expedition, and all desirous of proceeding; therefore the meal was no sooner finished than we prepared to depart, leaving most of the provisions and all the knapsacks which we had brought there except one, containing *one* chicken, in case any of us should feel disposed to eat when on the summit, and bottles of lemonade, and of a negus composed of vinegar, wine, and water, boiled with spices and a great deal of sugar, a capital beverage for such an expedition.

We traversed the Plateau, winding towards the left, or Mont Blanc du Tacul, leaving the

very likely the thermometer inclosed in the basket would not have descended to zero; but, in this rarified and constantly-renewed air, bodies impregnated with water experience a very great and rapid evaporation, and thus become cold much sooner than the dry bulb of a thermometer."

old route, which led right across the plain, and up the steep masses of snow and ice which hang on this side of the Mont Blanc, so delicately and dangerously poised, that the slightest noise, or concussion of the air, even that proceeding from speaking, may move them from their situation, and they fall, rushing down the declivities with overwhelming velocity, widening as they proceed, till at last they extend from one side of the mountain to the other, and cover the plain below with debris. It was one of those avalanches, or slips of snow, which, in this very spot, involved and buried under its mass, in a deep crevice, the three unfortunate men who were lost in the expedition formed by Dr. Hamel.

At last the sun shone upon us with animating heat, and welcome it was, for our pace was too steady and slow to give us an opportunity of keeping ourselves warm by exercise. Cold and benumbed as we were, we could hardly otherwise have borne the fatigue we had now to encounter, or undertake to pass the dangerous point which we found in the direction of our march; though it was some consolation that we knew it to be the last trial we had to undergo, there being afterwards two enemies only to

Paſsing a Cliff.

Drawn on Stone from a Sketch by J. Ruſkin.

Printed by C. Hullmandel.

contend with—the rarified air, and the fatigue arising from climbing the almost perpendicular ascent which leads directly to the summit.

The approach to this last danger was from the Plateau. We had to descend to a ledge projecting from the side of a wide crevice, and hanging over an abyss; thence to ascend a cliff, sloping into the gulf, and exceedingly steep. It was a wedge of ice, covered with frozen snow, propped, like a buttress, against a perpendicular precipice of the glacier, the face of which rose a few feet above the termination of the slope. Having scaled this part of it, we found a declivity of snow, inclining towards the precipice at an angle of about 50°. Turning to our left, we were obliged to walk along the edge of this precipice for some minutes, and then in zig-zag to ascend the hill until we came to a plain. It was a very difficult thing to keep a footing on this declivity, from the awkward position in which we were obliged to move forward, supporting ourselves with one hand buried in a hole cut in the snow. Besides, it was a hazardous enterprise for those in the rear to follow in the steps, which were also cut, but were soon worn away by the advance of the party.

Having accomplished this, our success was now

considered quite certain, and we congratulated each other on this happy circumstance, which inspired each member of the party with fresh animation and spirit.

While engaged in passing this last difficulty, our attention was arrested by a loud noise, or hissing sound, which the guides knew to proceed from a vast body of ice and snow falling in avalanche. It lasted some moments, and finished by a report which must have been caused by the precipitation of some immense mass upon a rock or plain. In an instant the awful calm which had been disturbed resumed its reign. A great avalanche had fallen. The guides thought that it was upon the Italian side of the mountain, but were mistaken, as was afterwards discovered.

A slightly-inclined plain of snow, presenting no difficulty, allowed us to quicken our pace, and proceed with more comfort; for the pain which we suffered from the cold had become most acute, producing a shivering throughout the limbs, too great to be much longer endured, and which nothing but the increased rapidity of our march could alleviate. An ascent of snow rose between us and the summit of the Rochers Rouges. It was here that I felt the first symptoms of the effect produced on the body by the

rarity of the air; for, soon after I began to ascend, I was seized with an oppression on the chest, and a slight difficulty of breathing; a quickness of pulsation soon followed, with a palpitation of the heart, a great inclination to thirst, and a fullness in the veins of the head, but still I experienced no headache, nor was there the slightest symptom of hæmorrhage or of hæmoptysis. Most of the guides suffered in the same way, and to as great an extent as myself*.

At nine o'clock we were on the last point of the Rochers Rouges, and came again into the old line of ascent, which we had quitted on the Grand Plateau, the first deviation from which had been made by Messrs. Hawes and Fellows, on the 25th July last, we having followed the route which these gentlemen had discovered.

I was much exhausted, and greatly disappointed on finding that the lemonade, the best

* The Count de Lusi gives the following account of the state his party were in when at this height:—

"Our situation was distressing and excessively painful; our eyes were bloodshot and smarting with the heat; the skin of the face was almost baked; that of the lips scorched and cracked, and my feet were quite benumbed. Three of the guides bled freely from the nose, and one of them from the mouth. Antoine (a servant) and a guide complained of great nausea, and of an irresistible inclination to sleep."

thing that could be used for refreshing our weakened powers, had been lost by the breaking of the bottles. My stock of raisins and French plums had been finished long before*: I was therefore obliged to proceed without relief, being afraid to attack the negus, for the guides must have shared it, and we might have found the want of it when we had got higher up, where the increase, both of fatigue and of the rarity of air, render it much more necessary. Every few paces that we ascended the oppression and suffering became greater.

We crossed a plain of snow which rose gently from the Rochers Rouges; at the end of it was the only crevice we had met for some time: it was deep and wide. One bridge was tried, but it gave way; a little further another was found, over which we managed to pass by being drawn across on our backs, on batons placed over it. Two or three managed to walk across another, using great care; but, when we had proceeded some little distance up the acclivity before us, we were surprised by a shrill scream, and on turning beheld Jean Marie Coutet up to his

* When eaten with snow, they are two of the most palatable articles that possibly can be made use of, to quench thirst, in expeditions up mountains, where the effects of rarified air are likely to be felt.

neck in the snow covering the crevice. He had wandered from the party, and coming to the crack, sought and found the place where the guides had walked across, and attempted to follow their course, but not taking the proper care to choose their footsteps, had got about eighteen inches on one side of them, and the consequence was, that when in the centre of the crevice, he sunk up to his shoulders, saving himself from inevitable destruction by stretching out his arms, and by his baton by mere chance coming obliquely on the bridge, otherwise he would have slipped through, and all attempts to have saved or raised him out of the chasm would have been impossible. The perilous situation he was in was appalling: all ran down to him, and he was drawn out, but had nearly lost his presence of mind, so greatly had he been terrified. However, he soon recovered, and acknowledged his want of precaution, which had very nearly destroyed the pleasure of the undertaking when so near its happy conclusion*.

* It is curious that the father of this man narrowly escaped perishing from the same accident in De Saussure's ascent, who thus describes it:

"One of my guides, Marie Coutet, nearly lost his life on one of these treacherous bridges. He had gone the evening before, with two other guides, to reconnoitre a passage, and

The ascent from this point was very steep, and the difficulty of surmounting it was greatly increased; for those effects of the rarity of the atmosphere which we had felt previously now became exceedingly oppressive. I was attacked with a pain in my head; the thirst became intense; the difficulty of breathing much greater. The new symptoms I now experienced were, violent palpitation of the heart, a general lassitude of the frame, and a very distressing sensation of pain in the knees and muscles of the thigh, causing weakness of the legs, and rendering it scarcely possible to move them.

The "Derniers Rochers," or the highest visible rocks, are merely a small cluster of granite pinnacles, projecting about twenty feet out of the snowy mantle which envelopes the summit and clothes the sides of the mountain.

On reaching these rocks, I was so much exhausted that I wished to sleep, but the experienced guides would not permit it, though

happily they had the precaution to fasten themselves together with the cords, for the snow suddenly gave way under his feet, and formed round him an empty space, six or seven feet in diameter, discovering an abyss to which neither base nor sides appeared, and so well concealed that there was no exterior appearance of danger. He remained suspended for some minutes between his two companions, who with great difficulty saved him."

UNIV OF MICH.

MONT BLANC from the COUVERCLE.

Drawn on Stone by J.D. Harding from a Sketch by Birmann. — Printed by C Hullmandel.

all appeared to be suffering more or less under similar sensations. From these Rochers we saw that there were many people on the Breven* watching our progress; among them we recognised some female forms, a discovery which renewed our courage, and excited us to still greater efforts than before.

Turning to the side of Italy, a spectacle was presented of great magnificence, from the assemblage of the vast and numberless white pyramids which appeared on the left of the view: Mont Rosa, in its surpassing beauty, being the most distant, the Col du Géant and its aiguille the nearest; while all the snow-clad rocks which lie on each side of the glacier running from Mont Blanc down the "Mer de Glace," and again up to the "Jardin," added splendid features to the scene.

> "Snow piled on snow; each mass appears
> The gather'd winter of a thousand years."

On the south, a blue space showed where the plain of Piedmont lay; and far in the background of this rose the long chain of the Apennines, and lofty Alps forming the coast of

* A mountain on the other side of Chamonix, exactly facing Mont Blanc. Its height is 8310 feet.

the Mediterranean, and running thence towards the right, meeting the mountains of Savoy. Gilded as they were by the sun, and canopied by a sky almost black, they made up a picture so grand and awful, that the mind could not behold it without fear and astonishment. The impression of so mighty a prospect cannot be conceived or retained.

It was with some difficulty that I could be persuaded to leave these rocks, for all my enthusiasm was at an end; the lassitude and exhaustion had completely subdued my spirit. I was anxious to get to the summit, but I felt as if I should never accomplish it, the weariness and weakness increasing the moment I attempted to ascend a few steps; and I was convinced that in a few minutes I should be quite overcome. I was induced to proceed by the exhortations of the guides.

We had to climb about one hour to get to the summit; but this part of the undertaking required a most extraordinary exertion, and severe labour it was*. From the place where

* I have since been told by a friend, who was on the Breven during the day, that he could not convey a better idea of the appearance which our party presented at this time, when observed through a telescope, than that which is given by Dr. Clarke: "Taking into account," says he, "all the relative

the rarity of the air was first felt, we had been able to proceed fifteen or twenty steps without halting to take breath; but now, after every third or fourth, the stoutest, strongest guide became exhausted; and it was only by lying down or resting on the baton some seconds, and turning the face to the north wind, which blew strong and cold, that sufficient strength could be regained to take the next two or three paces. This weakness painfully increased the difficulty of advancing up the ascent, which became every instant more steep*.

proportions, perhaps our little band, slowly climbing up this part of the mountain, pretty nearly resembled a detachment of ants painfully ascending the dome of St. Peter's after a snow shower."

* Dr. Clarke, in describing this part of the ascent, says, "Every two or three minutes we all sunk down in the snow, quite breathless, and scarcely able to utter a word. One of the guides had some hæmorrhage from an accidental blow, not from simple rarefaction of the air. The blood appeared to me decidedly of a darker colour than natural; our lips were quite blue; our faces extremely contracted and pale, and the eyes very much sunk, with a deep dark zone beneath the lower eyelids; but no one had the least spontaneous hæmorrhage from the gums, or eyes. Every start we cast a longing look at the summit, and then holding our heads low, pressed onward, till the feeling of exhaustion became irresistible, and we sunk again quite flat and still upon the snow. I had a slight tendency to nausea, most overwhelming head-ache, some pain of the breast, and rather feared the rupture of a blood-vessel, having been subject to hæmoptysis when a boy,

Although the sun was shining on us, I felt extremely cold on the side exposed to the cutting blast; and the other side of the body being warm, it increased the shivering, which had not quite left me, to such a degree as to deprive me almost of the use of my limbs. My shoes and gaiters were frozen hard, and my feet benumbed. Some of the guides, also, were similarly affected, and even suffered more than myself; but all were anxious to get on, evincing a resolute determination that was quite wonderful in the state they were in. Their attention to me was marked by a desire to render me every possible service, while they endeavoured to inspire me with the same firmness of which they themselves gave so strong an example. This earnest solicitude which they showed, much to their own discomfort and annoyance, to keep my spirits up, was in vain: I was exhausted; the sensation of weakness in the legs had become excessive; I was nearly choking from the dryness of my throat and the difficulty

but this pain and the rapid beating of the heart went off when we stopped to rest.

"When we were within a hundred yards of the summit, I felt, in addition to other unpleasant sensations, a strong tendency to faint, greater than I ever remember to have had, except once from bleeding."

of breathing; and my head was almost bursting with pain. My eyes were smarting with inflammation, the reflection from the snow nearly blinding me, at the same time burning and blistering my face*. I had, during the morning, as a protection, occasionally worn a leather mask, with green eye glasses, but latterly I found it oppressive, and wore a veil instead: that, also, I was now obliged to discard. I desired to have a few moments' rest, and sat

* In alluding to the effect which the air on high mountains produces on our bodies, M. de Saussure writes, "Since experience has taught me, that, in the rarefied air of high mountains, heat possesses a desiccative power nearly treble that which it has in the plain, I have been satisfied that the animal heat, the internal heat of the body, acting upon the skin in this rare air, reduces it to a state of extraordinary dryness; and if the rays of the sun, either direct or reverberated from the snow, should happen to strike upon it in this parched state, in which it is susceptible of the greatest state of inflammation, these rays will exercise a very powerful action upon it, and produce a most poignant and burning sensation, scorching it, and causing blisters, swellings, and all the other painful effects from which we suffer when the skin is not covered in such a manner as to preserve it from the action of the sun and this excessive evaporation.

"It is this extreme dryness which also produces the alteration of the system which we experience at these great elevations; although, as a sort of compensation, it augments the insensible perspiration; and this is one of the reasons why those in whom this secretion is performed with difficulty find themselves better than others, in these high situations."

down: I besought the guides to leave me: I prayed Julien Devouassoud to go to the summit with them, and allow me to remain where I was, that by the time they returned I might be refreshed to commence the descent. I told them I had seen enough: I used every argument in my power to induce them to grant my request. Their only answer was, that they would carry me, exhausted as they were, to the summit, rather than that I should not get to it: that if they could not carry they would drag me.

Being unable to resist, I became passive, and two of the least exhausted forced me up some short distance, each taking an arm. I found that this eased me, and I then went on more willingly; when one of them devised a plan which proved of most essential service. While I rested, lying down at full length, two of them went up in advance about fourteen paces, and fixed themselves on the snow; a long rope was fastened round my chest, and the other end to them; as soon as they were seated, I commenced ascending, taking very long strides, and doing so with quickness, pulling the rope in; they also, while I thus exerted myself, pulled me towards them; so that I was partly drawn up, and partly ran up, using a zig-zag direction; and the amusement derived from the process

kept us in better humour than we were before. I was less fatigued, and felt the effects of the air less, by this process, than by the slow pace in which I had hitherto attempted to ascend.

I had taken very little notice of the progress we were thus making, when I suddenly found myself on the summit. I hastened to the highest point (towards Chamonix), and, taking my glass, observed that the party on the Breven had noticed the accomplishment of our undertaking, and were rewarding us by waving their hats and handkerchiefs, which salutation we returned. I could also just distinguish the people in Chamonix collected in considerable numbers on the bridge, watching our progress and success. It was exactly eleven o'clock.

The wind blew with considerable force. I was too much worn out to remain there long, or to examine the scene around me. The sun shone brilliantly on every peak of snow that I could see; hardly any mist hung over the valleys; none was on the mountains; the object of my ambition and my toil was gained; yet the reward of my dangers and fatigues could hardly produce enjoyment enough to gratify me for a few moments. The mind was as exhausted as the body, and I turned with indifference from the view

which I had endured so much to behold, and throwing myself on the snow, behind a small mound which formed the highest point, and sheltered me from the wind, in a few seconds I was soundly buried in sleep, surrounded by the guides, who were all seeking repose, which neither the burning rays of the sun nor the piercing cold of the snow could prevent or disturb.

In this state I remained a quarter of an hour, when I was roused to survey the mighty picture beneath. I found myself much relieved, but still had a slight shivering. The pain in the legs had ceased, as well as the headache, but the thirst remained. The pulse was very quick: and the difficulty of breathing great, but not so oppressive as it had been.

Having placed the thermometer on my baton, in a position in which it might be as much in shade as possible, I went to the highest point, to observe my friends on the Breven and in Chamonix once more, but was summoned immediately to a repast, and willingly I obeyed the call, for I felt as if I had a good appetite. Some bread and roasted chicken were produced, but I could not swallow the slightest morsel; even the taste of the food created a nausea and

disgust. One or two guides ate a very little; the rest could not attempt to do so*.

I had provided a bottle of Champagne, being desirous to see how this wine would be affected by the rarity of the air. I also wished to drink to the prosperity of the inhabitants of the world below me; for I could believe that there were no human beings so elevated as we were at that moment. The wire being removed, and the string cut, the cork flew out to a great distance, but the noise could hardly be heard†. The

* This loss of appetite was experienced by the whole party in Dr. Clarke's ascent when on the Grand Plateau. He gives the following description of their breakfast:

"It was laughable enough to see the same men, who a few hours before would have eaten a fraction of a roasted buffalo, now hanging their heads in silence, and fastidiously picking a pullet's wing. Worthy Simeon had still some appetite, but said that, after eating, his headache was increased. With some difficulty I got through half a chicken's wing, swallowed a few crums of bread and a few drops of wine, and this with raisins was my whole consumption of food during this fatiguing march of fourteen hours. The digestive powers seemed totally deranged: we were really in an incipient stage of fever, and required exactly the same treatment. The guides had brought up some lemonade from the rocks, but either our taste was vitiated, or the liquid bad, for we could not drink it;—nothing but a little snow and a few raisins seemed agreeable or refreshing."

† "If sound has less power at this elevation, it arises, not from any weakness of the organ of hearing, but from the effect of the rarity of the air diminishing the tone and force

wine rolled out in the most luxuriant foam, frothing to the very last drop, and we all drank of it with zest; but not three minutes had elapsed when repentance and pain followed; for the rapid escape of the fixed air which it still contained produced a choking and stifling sensation, which was very unpleasant and painful while it lasted, and which frightened some of the guides. A very small quantity was sufficient to satisfy our thirst, for nine of us were perfectly satisfied with the contents of one bottle, and happily its unpleasant effects were but of short duration.

of the vibration, and from the absence of all echo and repercussion from solid objects on this isolated summit. Indeed it is so weakened by these united causes, that, on the summit of Mont Blanc, the report of a pistol would make no more noise than that which a small cracker would create in a chamber.

" The organ most affected by the rarity of the air is that of respiration, and the circulation is consequently affected in the same degree. It is necessary that a certain quantity of air should traverse the lungs in a given time. If the air is twice as rare as that generally breathed, the number of respirations also must be doubly frequent, so that rarity may be compensated by volume. Now, as the respiration is accelerated, so is the circulation.

" One guide's pulse beat 98 times in a minute, a servant's 112 times, and De Saussure's 100. At Chamonix they severally beat 49, 66, and 72. They were all suffering, therefore, under a very high state of fever."—*De Saussure.*

The most peculiar sensation which all have felt who have gained this great height arises from the awful stillness which reigns, almost unbroken even by the voice of those speaking to one another, for its feeble sound can hardly be heard. It weighs deeply upon the mind, with a power the effect of which it is impossible to describe. Nothing I ever beheld could exceed the singular and splendid appearance which the sky and the sun presented. The blue colour of the one had increased to such a depth as to be almost black, while the sun's disk had become excessively small, and of a perfect and brilliant white. I also experienced the sensation of lightness of body, of which Captain Sherwill has given a description in the following words: "It appeared as if I could have passed the blade of a knife under the sole of my shoes, or between them and the ice on which I stood."

The researches of Captain Sherwill* have

* "On my return from the south of Italy, towards the end of the year, I passed two days with the governor of Genoa, the Marquis D'Yenne, who loaded me with politeness and attention. Wishing to profit by this kindness, and by my stay in the city, I inquired among the pilots and fishermen who frequent the Mediterranean, whether there was not some one of them who, during his short trips, had seen Mont Blanc. The numerous voyages they take to the coast of

made it nearly certain, that it is impossible to see Mont Blanc from the Mediterranean; and

Africa in search of coral, one of the most important objects of commerce to this city, appeared to me to offer good opportunities for observing the snowy summit of that mountain, if it be true that it can be perceived at so great a distance.

" Monsieur D'Yenne had also the complaisance to order a sort of inquiry to be made on this subject, by the commandant of the port, among the oldest of those who had navigated this sea, and he was unable to find one who could say that any of them ever had perceived the summit of Mont Blanc from it.

" The bishop of Savona happened to be present at the table of the governor when the conversation turned on this point. In the opinion of this learned prelate, the nearest station to Genoa from which it would be possible to distinguish Mont Blanc was the island of Elba, distant from the city about 45 leagues. Now from Genoa to Mont Blanc, as a bird would fly, we may reckon 45 or 50 leagues; so that the whole distance from Elba to the mountain amounts to 90 or 95 leagues. The bishop did not doubt that it was possible to discover the object in question at such a distance, provided the atmosphere was perfectly clear, the plains of Alessandria and Marengo freed from their eternal mists, and a telescope of the greatest power made use of; the point to be observed, and consequently the line of direction, being previously fixed.

" All travellers who have visited the ' Allée Blanche,' or ascended the ' Cramont,' to enjoy from that side the perspective of Mont Blanc, have observed that there is much less snow on this flank than on the side of Chamonix. We may therefore conceive that it is more difficult to distinguish, on the Italian side, a naked and grey rock, at the enormous distance of 90 leagues, than a mass of snow, the dazzling whiteness of which offers to the eye a mark very perceptible.

MONT BLANC from the VALLEY of COURMAYEUR.

Drawn on Stone by J. D. Harding from a Sketch by Coingnet. Printed by C. Hullmandel.

UNIV. OF MICH.

I now consider it an indisputable point, that the sea cannot be discovered from Mont Blanc, for although the ray of vision extends a considerable distance on the ocean, the height of the Maritime Alps precludes all view of it.

I observed the thermometer placed four feet from the snow: in the shade it indicated 31° Fahrenheit, but in the sun the mercury rose one degree. The heat, at the same time, was most oppressive; the side of the body exposed to the sun being burnt, the other almost frozen.

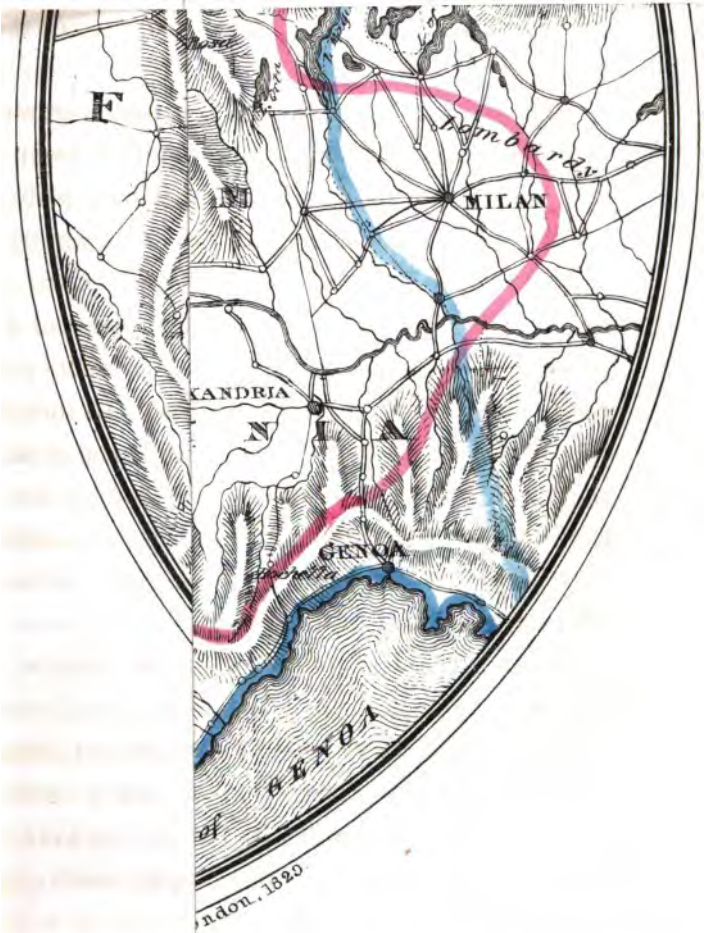
When we first got to the summit, there was no haze to be seen, but now a slight film of clouds began to spread over the sky, and a dense mass of vapour gathering on the horizon behind the mountains of Dauphiné gave signs of an approaching storm. There was no time to be lost, as we were determined, if possible, to get down to Chamonix that night; therefore I

"From these observations we can, I think, conclude, that if Mont Blanc, raised, as it is, about 100 toises above all the surrounding mountains, cannot be seen from the Mediterranean, for the strongest reason that sea ought not to be distinguished from the summit of the mountain. In fact, the one forms a point in the horizon; the other, confounded with the whole region of Savoy, Piedmont, and the countries adjacent, is, as it were, lost in immensity."—*Preface to an edition of Captain Sherwill's "Narrative," published in French at Geneva, in* 1827.

commenced a survey of the panorama spread around and beneath us, than which there cannot be any more wonderful and splendid. Coutet, who had been seven times on the summit, said he never before had enjoyed so extensive a prospect, nor did he remember to have seen the valleys and mountains so clear from mist as they were on this day.

My eye wandered over this glorious panorama, and I endeavoured to stamp it on my brain — a task, to attempt the execution of which is almost a folly, and far beyond my power of memory or of description. I will strive, however, to put my recollection of the striking objects of this panorama under such arrangement as will enable those who know the particular spots to judge of the splendour of the whole; but I am afraid I shall not be able to convey any conception of the sublime and splendid picture, although I may give some idea of its magnitude, to those who have not visited the Alps.

Beyond the line of the Jura mountains appeared a wide and confused blue space, which comprehended those plains and hills of France lying behind this chain, one or two mountains of which, gently sloping to the lake of Geneva, whose bright crescent, lying apparently right under Mont Blanc, and surrounded by a dark



MAP of 6d line enclosing the Space to which the actual view.

the Shreckhorn—the Eiger—the Finsteraarhorn —raised their white fronts in beautiful distinctness.

Turning towards the right, St. Gothard, the Grimsel, the Furka, and part of the chain of mountains on the Italian side of the Vallais appear—the Matterhorn's pointed summit, high lifted up among them, and glaring in the sunshine—then Mount Rosa, the queen of the Alps, one of the most beautiful of mountains; its towering enormous pinnacles presenting a splendid appearance. Nearer to us were, the St. Bernard—Mont Velan—the long line of Aiguilles, beginning from the Col du Balme, and coming along the valley of Chamonix to the Aiguille du Midi, which was far beneath our feet: among these, the Argentière and the Dru were most prominent. Far below us were the Mer de Glace, the Jardin, and the lofty peaks surrounding them. To the right of these, and nearer us, rose the Col du Géant and its fine aiguille. Towards the south, the eye penetrated into the valley of Aosta and part of the Allée Blanche; then, glancing over the mountains on the other side, rested on the immense blue surface formed by the plains of Lombardy and Piedmont, in which was dis-

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covered the course of the Po. The situations of Turin and Milan were pointed out, but these cities were not visible.

At the further extremity, and to the left of the blue, rose the Apennines; they, joining the Maritime Alps, formed a long line of mountains running towards the right, along the Mediterranean, as far as the Col du Tende, and thence turning up the western side of the blue surface or plain of Piedmont. Monte Viso reared itself high among them, as well as the lofty points about the Cenis. Behind gaps in these mountains were seen another chain, being the mountains of Dauphiné and Provence. The Mont Cenis closed this western boundary to the plain of Piedmont; and on this side of it appeared the Petit St. Bernard and Tarentaise Alps. The Col du Bonhomme and the mountains around Servoz and Cluses followed; and, further in the back-ground, the mountains of the Lyonnais. We looked down into the valleys of Servoz and Salenche, and upon the round back of the Dome du Goûté, and again upon the lake of Geneva, thus closing the panorama.

We could perceive our friends still assembled on the Breven, enjoying a prospect less extensive than the one I have attempted to describe,

although in some respects, perhaps, equally beautiful.

The shape of the summit has been well likened to the "dos d'âne" (ass's back), the broadest and highest part being toward the north, or Chamonix, and the narrowest inclining a little to the east. An idea of the summit, as we found it, may be formed by cutting a pear longitudinally into halves, and placing one of them on its flat side; but consisting, as it does, of snow, drifted about by the wind, and subject to increase and diminution by the accumulation of the winter's storms and the influence of the summer's sun, it may probably present some novelty of form to every traveller who visits it. We found it to be about one hundred and seventy feet in length, and its greatest breadth about fifty. The hard snow of which it is composed, bearing a resemblance to a conglomerate of crystal beads, appeared to be of the depth of from two hundred to three hundred feet upon its rocky foundation, which probably consists of a cluster of pinnacles similar to the Derniers Rochers, some points being visible, protruding through their snowy mantle nearer to the summit, although from their situation they were inaccessible.

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We found no living thing upon it; but Mr. Fellows mentioned to me that he had seen a butterfly, borne by the wind, pass rapidly over his head while on the summit.

Having determined, as I have already said, to attempt the descent to Chamonix that evening, it was necessary that we should not remain too long on the summit; the ropes were therefore adjusted, and other preparations made for starting; and, whatever reluctance I might have felt, in the middle part of our ascent from the Grands Mulêts, to persevere in the exertion necessary to reach the spot upon which we now stood, it did not in any degree equal the unwillingness which I felt to commence my return. The more I gazed on the stupendous scene around me, the more I was delighted and astonished, my most sanguine expectations having been much exceeded; and now, just as I had become capable of marking and appreciating its beauties and wonders, the signal for departure tore me from the enjoyment.

CHAPTER III.

" The mists begin to rise from up the valley:
" I'll warn him to descend, or he may chance
" To lose at once his way and life together."

At twelve precisely we left the summit. Every one who has climbed a rock, a steep mountain, or any very elevated point, knows how much more difficult the descent is than the ascent; and of this I had painful experience in my progress downwards, for I found the descent of the first declivity by no means so easy a task as I had expected. It was tedious and fatiguing, from the exertion every moment applied to keep myself from slipping; or, having missed my footing, to set myself right again. From the position of the body, bending downward, the effect of the rarity of the air on the lungs was not so great as it had been in ascending; but it oppressed the limbs with the distressing sensation of lassitude which I have adverted to; and, in a short period, a very acute pain in the knee, arising from the great stress put upon that part of the limb by the

act of descending, added much to my inconvenience.

Arrived at the Derniers Rochers, the guides made search for good specimens of the rock; and, in so doing, found a bottle, which Dr. Clarke and Captain Sherwill had left two years before, in a snug corner of the rocks. Coutet remembered that they had placed this bottle in the situation in which it was found; and said they had written their names, and those of their guides, on a scrap of paper, which they enclosed in the bottle. I found subsequently, by reference to the doctor's narrative, that the inscription had been of a more ambitious character; and I regret to state that it had already perished. The bottle was half filled with water, the paper within was nearly destroyed, and the writing was entirely illegible. I poured out the water, and enclosed within the bottle a paper, on which were written the date and the names of our party; and which may, by some future traveller, be found in a state similar to that in which I found the former record, which its authors fondly anticipated might "remain unaltered for many centuries*."

* "These (a few branches of olive) we had enclosed in a cylinder of glass, with the name of our king, and of his deservedly popular minister, subjoining the names of some

We followed, as closely as possible, the track we had made in ascending; but, in some parts which were much exposed to the sun, every trace had disappeared. The crust of ice on the surface melts rapidly during the day, filtering through and softening the snow frozen into a porous ice beneath. The surface freezes again at night, and forms a new incrustation, a process which is in constant operation. The whole summit of the mountain is composed of this sort of porous ice; and that of the glaciers is very similar, though more compact. From Les Derniers Rochers we went quickly to the Rochers Rouges, running down the declivities,

of the remarkable persons of the age, whether high in honour, as enlightened politicians, revered as sincere and eloquent theologians, admired as elegant poets, useful as laborious physicians, or adorning the walks of private life by the mingled charm of urbanity, gentleness, accomplishments, and beauty. Having reached the loftiest uncovered pinnacle of Mont Blanc towards England, the land of our hopes, we selected a little spot, sheltered from the storm by incumbent masses of granite, and there buried, deep in the snow, an humble record, but sincere: hermetically sealed down by an icy plug, covered with a winter's snow, and perhaps gradually incorporated into the substance of a solid cube of ice, it may possibly remain unaltered for many centuries, like the insects preserved in amber, and so bear witness to distant generations, when other proud memorials have crumbled into dust."—*Dr. Clarke's Narrative.*

and taking immense strides. This would appear to be a dangerous process in such a situation; but, in fact, it is impossible to slip, the leg sinking up to the knee into the snow at each step; however, at times there is a risk of the fracture or dislocation of a limb, from slipping when deeply immersed in the snow.

We crossed plains of snow on which the heat was insupportable, and the air almost suffocating. It was in crossing the same spot, earlier in the day, that we were rendered nearly senseless by the great intensity of the cold. A short time brought us to the great fissure already described as the last danger we had encountered in ascending; and it now proved a fearful task to get down the cliff, and pass the chasm below it. We managed to do so, however, without accident. In ascending to this spot from the Grand Plateau, we had been obliged to make a little circuit, owing to the steepness of the hill; a circumstance which enabled us now to make use of the *glissading* or sliding plan, one which guides generally adopt, when practicable, in descending the almost perpendicular snow hills. The first, finding the way clear and safe, sat down on the edge of the declivity, and in an instant slid on to the level below. I was desired to sit behind Devouassoud, as close as possible

to him, and to put my legs round his body, my feet over his thighs, and my hands over his shoulders. Thus placed, I kept fast hold of him, and away both glided with immense velocity; he making use of his baton as a kind of rudder to guide our course, and with his feet ready to moderate the rapidity of our progress, by plunging them into the snow. This is a sort of Russian mountain sport on a grand scale; and, on occasions like the present, is equally recommended for celerity and convenience. It often enabled us to shorten our route, by altering it for the opportunity of thus sliding down any declivity which we met with, passing in one moment over tracts which it had cost us an hour to climb. It excites merriment, from the tumbles and rollings over which occasionally occur. Those who are sliding down less rapidly are often overtaken by those whose velocity is greater, and both are generally upset, and roll down together for some distance before they can get right again. When crevices are near the sides, or terminate the descent, it is dangerous, and no jokes are practised. The guide is very skilful in this manner of gliding down places nearly perpendicular. He can in most cases, by the assistance of the baton, turn himself from any dangerous part, even the very

brink of a precipice, should he chance to meet with one either running parallel with or intercepting his course, and can easily stop himself in time if it should be before him. This dexterity is extraordinary, considering the amazing velocity of the descent.

The guides also resort to another plan, which requires the most consummate skill in the execution. It resembles, I believe, the Norwegian manner of descending hills on long skates; but the Chamonix men have nothing of the sort: they place their feet together; stand on the heel; incline the body backward, resting on the baton, which is placed under the left arm, and the point in the snow, at a proper distance behind, making a triangle, of which the body and baton form two equal sides. Keeping this position during the whole descent, they slide down with wonderful celerity.

I have before observed, that during our ascent a tremendous noise was heard, which was thought to be produced by some avalanche on the Italian side of the mountain; but we now discovered the real cause, and saw the danger from which we had escaped by following the new route: The noise had proceeded from an avalanche similar to, though greater, than the one which destroyed the three unhappy guides already

mentioned. It had passed exactly in the line of ascent which we must have taken had not the new track been discovered, and it had fallen at the very time when we should probably have been in the centre of it. We should all have been inevitably carried away by its vast body; for so great was it, that a great part of the length of the plateau appeared to be covered with huge blocks of ice and mounds of snow which had formed parts of its overwhelming mass.

I cannot describe my feelings when I saw the poor guides turn pale and tremble at the sight of the danger from which they had escaped. Clasping their hands, they returned the most heartfelt thanks for this deliverance, recalling to mind the dreadful calamity and miserable fate of their companions, destroyed by such another avalanche. A deep impressive silence prevailed for some moments: the contemplation of this danger and escape was too much for even these uncultivated beings, under whose rough character are found feelings which would do honour to the most refined of their fellow-creatures.

I will give Devouassoud's* account of this

* This was the second escape from death which Julien had in this expedition. The first is related by Mr. Durnford:

"During a halt of five minutes, which we made at the chalêt for the purpose of taking a draught of goat's milk,

event, as it is detailed by Dr. Clarke in his published narrative:

"We had now not quite a mile to proceed," states Dr. Clarke, "before arriving at the spot where the sad catastrophe occurred in 1820. This circumstance threw an air of seriousness into all faces. Our captain, Coutet, and brave Julien, had both most narrowly escaped death; nor could they approach the grave of their unhappy comrades without emotion. Julien gave a very clear and minute account of this disaster, which I wrote down immediately from his lips. Every particular was of course interesting to us, but might not be so to others, and we have only space for the heads. The party had breakfasted on the Grand Plateau, near the

Julien Devouassoud, one of our guides, son-in-law to Dr. Paccard, swallowed a mouthful of sulphuric acid, which he had bought at Chamounix by mistake for acetic acid, which on these excursions the guides ordinarily drink diluted with water. He suffered acutely for some minutes, until Dr. Hamel thought of making him swallow a quantity of wood-ashes and water, which were fortunately at hand. The alkali neutralized the acid, and he was soon in a condition to enter into the railleries of his companions, who, on his informing them in answer to their numerous inquiries, that a young woman had served him at the shop, and had mistaken the one acid for the other, were very merry on the occasion, and insisted on its having been intentional on her part, and proceeding from *malice prepense*."

spot at which we halted. They then traversed the plain, and began to ascend the highest steeps of the mountain, called among the guides La Calotte de Mont Blanc*. In proceeding obliquely upward, they approached a dark rock, which we saw above us deeply imbedded in the snow. 'The order of march,' said Julien, 'was this:—at the moment of the disaster, the leading guide was Pierre Cairriez; 2d, Pierre Balmat; 3d, Auguste Tairraz: (these three perished); then, 4th, moi (Julien Devouassou); then, next to me, Marie Coutet (our captain); then, behind, were five other guides, with Dr. Hamel (a Russian physician), and two English gentlemen. Suddenly (said he) I heard a sort of rushing sound, not very loud; but I had no time to think about it; for, as I heard the sound, at the same instant the avalanche was upon us. I felt my feet slide from beneath me, and saw the three first men fallen upon the snow with their feet foremost. In falling, I cried out loudly, 'Nous sommes tous perdus!' I tried to support myself by planting the ice-pole below me, but in vain. The weight of snow forced me over the baton,

* "The close black silk-cap, worn on the crown of the head by the priests, is called the Calotte. Whenever the original French is given, it is exactly as spoken by the guides, without any emendation."

and it slipped out of my hand. I rolled down like a ball, in the mass of loose snow. At the foot of the slope was a yawning chasm, to the edge of which I was rapidly descending. Three times I saw the light, as I was rolling down the slope; and, when we were all on the very edge of the chasm, I saw the leg of one of my comrades, just as he pitched down into the crevice. I think it must have been poor Auguste; for it looked black, and I remember that Auguste had on black gaiters. This was the last I saw of my three companions, who fell headlong into the gulf, and were never seen or heard again.

"'At this moment I was just falling into the same crevice, and can but confusedly understand why I did not: but I think I owe my life to a very singular circumstance. Dr. Hamel had given me a barometer to carry; this was fastened round my waist by a strong girdle. I fancy that at the moment this long barometer got beneath and across me; for the girdle suddenly broke, and I made a sort of bound as I fell; and so, instead of following my poor comrades, I was pushed over into another crevice, close to that in which they were killed. This chasm was already partly filled with snow: I do not think I fell more than fifty feet down, alighting on a soft cushion of snow, and a good deal covered

with it above. I suppose before tumbling into the chasm, we slid down from one hundred and fifty to two hundred feet; but I cannot tell, for it seemed to me not more than a minute from the time I heard the noise of the avalanche above me, till I found myself lying deep down in a narrow crack.' All estimate of distances in such circumstances must, of course, be rude guesses. Coutet's reply to the same question was this: 'I should fancy I slid down near four hundred feet, and tumbled headlong about sixty feet.' I asked Julien what his thoughts were during this awkward tumble. His reply was in these words: 'Pendant que j'ai roulé j'ai dit à moi-même, 'Je suis perdu, adieu ma femme, et mes enfans!' et j'ai demandé pardon à Dieu. Je n'ai rien pensé absolument des autres.'

"'On coming to myself,' continued honest Julien, 'I was better off than I had expected. I was lying on my back, heels upward, with my head resting against the icy walls of the crack, and I could see some light and a little of the blue sky through two openings over my head. I was greatly afraid that some of my limbs had been broken, but I had sunk into the mass of soft snow, and though bruised by falling against the sides of the ice, yet nothing was broken, and in a few moments I contrived to get up on my

feet. On looking up, I saw a little above me a man's head projecting from the snow. It was Marie Coutet (our captain): he was quite covered with snow up to the neck, his arms pinioned down, and his face quite blue, as if he was nearly suffocated. He called to me in a low voice to come and help him. I found a pole in the crevice (I think not one that had belonged to the three who perished, but another): I went to Coutet, dug round him with the baton, and in a few minutes I got Coutet clear of the snow, and we sat down together. We remained in silence, looking at each other for a minute or two, thinking that all the rest were killed. Then I began to crawl up on the snow that partly filled the crack; and, in climbing up, I saw above me David Coutet, who was crying, and saying, 'Mon pauvre frère est perdu!' I said, 'Non! Il est ici en bas.' (Coutet was climbing behind Julien, and so not seen at first). Et moi j'ai dit, 'Les autres sont ils tous là en haut?' Ils ont dit qu'il manquoit encore trois. Et j'ai demandé, 'Qui sont ils qui manquent?' Ils ont dit, 'Pierre Cairriez; Pierre Balmat; et Auguste Tairraz.' Nous avons demandé si les messieurs avoient du mal. Ils ont dit que non. Then the guides helped us to get up about fourteen feet on the solid ice. They threw us down a little

axe to cut steps, and put down the end of their poles, and we two got out.

"'We all went to search for the three others: we sounded with our poles, we cried aloud, we called them by their names, put down a long pole into the snow and listened; but all was in vain, we heard not the slightest sound. We spent two hours in this melancholy search, and by this time were well nigh frozen, for the wind was bitterly cold, our poles covered with ice, our shoes frozen as hard as horn. We were compelled to descend; we hurried down in perfect silence, and returned to the inn late at night.'

"The three poor men were all unmarried. Pierre Cairriez was a blacksmith, and his family depended on him for their main support. Julien drew a very simple but touching picture of the scene of sorrow presented when the fatal news became known to the surviving friends. These rugged brave mountaineers would face death themselves unmoved, but it was with a low voice and a glistening eye that allusion was made to the fate of their comrades, and the grief it had occasioned. The two English gentlemen contributed very generously to the relief of the distressed families.

"Worthy Simeon confirmed his brother's narrative, and gave me all the particulars that fell

under his own eye. He described most affectionately the despair of the bereaved friends. He tried to look perfectly unmoved, and seemed ashamed of his emotion. Yet this fine brave fellow could hardly keep from tears as he said, 'La mère de Pierre Balmat se desoloit. Trois mois après elle est morte.'

"Such is the abstract of the story. I have before me a simple but very intelligible sketch of the relative positions which Julien made for me with his own hand, but it would be unsuitable to the present occasion, and we have already to apologize for so long a digression. This unhappy accident seems not to have been altogether what is commonly called an avalanche, but simply a part of the stratum of new snow which slipped upon the old, and swept all before it in its descent. The extent of snow put in motion was estimated at about 200 feet in height, 150 in breadth, and rather more than a foot in depth."

The first guide who spoke turned to me, saying, "My God, had we been obliged to have gone with you by the old route, what a destiny would have awaited us! At the bottom of some deep crevice we might now have been corpses, mangled, suffocated, and buried beneath the mass of snow." One married man vowed most solemnly, that he never would be tempted to

make the ascent again, whatever might be the inducement offered. Thus did they contemplate the escape; but thought not on the dangers of a like description which threatened them before they could reach the valley. Perils nearly equal to this were to be encountered; in the descent the passage of the crevices is acknowledged to be much more dangerous than in the ascent; and the afternoon is on the glacier the most dangerous part of the day, from the more frequent fall of avalanches. All this was well known to them; but, accustomed to danger, they contemplated calmly that which was to be encountered, at the same time that the retrospect of that from which they had escaped, and the recollection of their companions who had perished, appeared for the moment entirely to unnerve their faculties and to destroy their courage.

The crossing the plateau to our breakfast station was performed with distressing fatigue, from the softness of the snow, in which we sunk up to the knees at every step. The oppression of heat, from the sun burning intensely over us, and the rarefaction of the air causing me every moment to gasp for breath, produced such a degree of faintness that I was obliged to throw myself repeatedly on the snow. Water was

brought to me, and my temples rubbed with snow; and when a little recovered, I proceeded a short distance forward, but again felt the necessity of resting; then the blood boiling in a state of fever, my face scorched by the reflection from the snow (for I could, at this time, wear neither mask nor veil), continued to render my state most painful and distressing. I got to the bridge, on which we had breakfasted, and where the atmosphere, although cooler than at any part of the plateau, still was at a temperature of fever heat. By lying on it with my face on the snow, I in a few minutes felt much relieved, and followed the advice and example of the guides, by eating a morsel of chicken, but I could not satisfy the excessive thirst which parched my throat; our liquids were exhausted, and I attempted in vain to quench it with snow or water.

It was declared that no time was to be lost here, and that we must endeavour to reach the Mulêt, if possible, before the storm, which was gathering, should commence; but unwilling to leave the plateau without examining it more, I induced the guides to wait a few minutes while I did so.

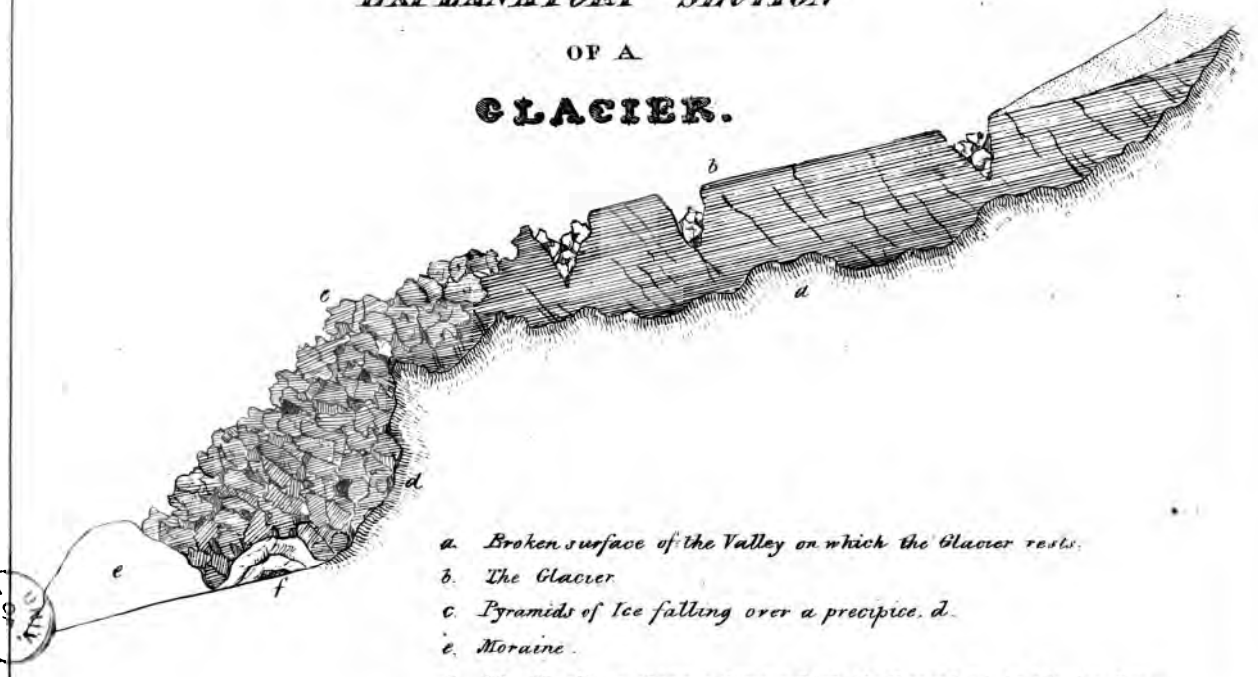
A short description of a glacier may assist the reader in following me through this narrative.

I shall therefore observe, that glaciers are generally divided into two classes: the one situated in valleys, the other extended on the declivities of mountains. The former is the most considerable, both in depth and extent. It is enclosed in valleys more or less elevated, and surrounded by mountains still higher. Sometimes it fills up the whole space of the valley, and, when confined by a narrow outlet, forms an icy lake, or unbroken plain, on which carriages might pass. Such is the Grand Plateau, which is in most places free from fissures, and as smooth as a meadow. More frequently, however, the glacier fills the upper part of a sloping ravine, or mountain glen, and in the summer is the source of a torrent pouring down through the valley beneath. Such, for instance, is the "Mer de Glace," or Glacier de Bois, in the valley of Chamonix, which fills the whole space of a mountain glen, varying from about half to a quarter of a league in breadth, and extending five leagues in length without interruption. Its depth cannot be accurately ascertained, but it may vary in different situations from one to three hundred feet; and the glen or ravine sloping downwards to its opening into the great valley, as is shown in the accompanying sketch, and the body of ice being perpetually diminished

EXPLANATORY SECTION

OF A

GLACIER.



a. Broken surface of the Valley on which the Glacier rests.
b. The Glacier.
c. Pyramids of Ice falling over a precipice. d.
e. Moraine.
f. The Vault or Cavern from which the Torrent of the Glacier flows.

BRITISH MUSEUM

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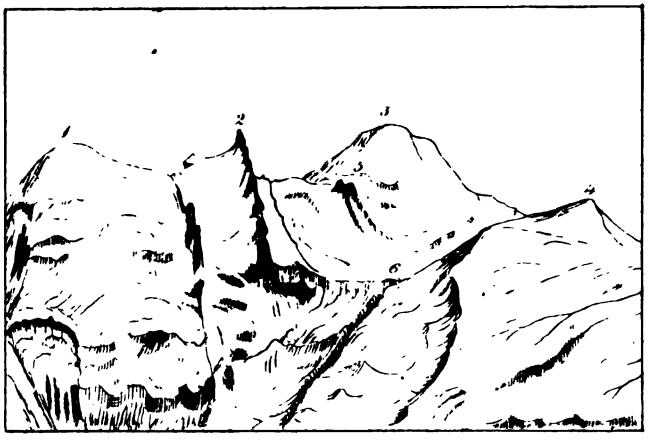
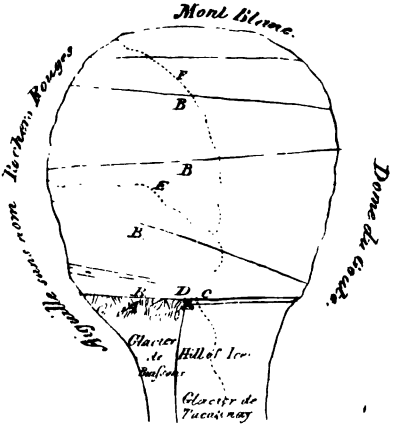
by the melting of the lower part, which feeds the torrent of the Arveiron, while it receives constant supplies from the accumulation of snow, and the fall of avalanches in the upper part, the whole mass is by its own weight slowly but irresistibly impelled forward in its advance over a broken surface; and, forcing its way through the cliffs, which hem in its course on either side, it forms those crevices or chasms which have been so often mentioned, and which are generally transverse sections of the glacier, varying in width as the ice on one side advances with the general mass, while the wall on the other side is kept back by some rock or cliff, which impedes its progress, until at length it also is forced forward, and falls into the chasm in broken masses; some of which, being intercepted by the opposite side, form those bridges by which alone the crevices can be passed. The substance of the glacier, especially near its surface, is porous and full of air bubbles; the more dense ice below being produced by the infiltration and the subsequent congelation of water from the melting of the snow on the surface; although still, in the deepest parts of the crevices which we could personally examine, the body of the ice, with the exception of icicles, sometimes of enormous magnitude, was very

different from the compact transparent ice which is produced by the freezing of a body of water. The transparency and the density of the ice appear to be in proportion to its depth in the glacier, and its solidity and cohesion are found to decrease in the more elevated situations, until on lofty summits it can hardly be called ice, but rather resembles a conglomeration of hail-stones.

The second kind of glacier, that which lies on the sloping sides of mountains, is produced by similar accumulations of snow, melting by the influence of the sun on the surface, and the water congealed as it descends, but forming masses more porous and opaque than the glaciers of the valleys. These, according to their increase by the fall of snow, and their change of position from the melting of the under parts, form avalanches, which are masses occasionally breaking off, or slipping away, from the mountain glaciers, and tumbling or pouring down from the inclined rocks, gathering power and gaining velocity in their progress, until they fall upon a glacier, or into a valley, with the shock of an earthquake, and sometimes with overwhelming destruction. The immediate cause of the fall of an avalanche may be a storm, such as that which was now gathering, and it is supposed sometimes to



1 Mont Blanc du Tacul
2 Aiguille sans nom
3 Mont Blanc
4 Dome du Goute
5 Rochers Rouges
6 Grand Plateau



A. Precipice of Ice.
B. Crevices
C. Wide Crevice at commencement of Plateau
D. Bridge upon which the Party breakfasted.
E. New Route.
F. Old Route.

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proceed from even a slight agitation of the atmosphere. The general cause, however, constantly in operation, is the partial melting of the snow, which being accelerated by the heat of the sun, in the latter part of the day, sufficiently explains the greater frequency of avalanches at that time.

The ice is disposed in strata, each stratum being the product of a year's accumulation, the lower ones pressed down and narrowed, by the constantly increasing weight imposed upon them, and by the continual melting away of the ice and snow, in contact with the earth, which takes place even during the most rigorous cold, causing torrents to flow from the glaciers in the midst of winter. In their course they carry along the valleys those masses of stone and gravel which have fallen upon them from the surrounding mountains, casting them by degrees to their sides, then heaping them up, and forming the moraines, or parapets, which I have before had occasion to notice. In the German part of the Alps a moraine is called Gletscherwalle, or wall of the glacier, a name which gives some idea of its nature and position.

The Grand Plateau is a valley, or frozen lake, of nearly two leagues in length, enclosed on three sides, by Mont Blanc, the Dôme du

Goûté, and the Aiguille sans Nom, from each of which, and more especially from Mont Blanc, a perpetual accumulation of avalanches pours down, and adds to the icy mass, which fills the valley, while its progress onwards is checked by the contracted outlet between the Aiguille sans Nom and the Dôme du Goûté, and probably by a rocky ridge or barrier, which appears to extend across the valley, under the ice, and to be the foundation of the wall or precipice of ice in which, as I have already described, the Grand Plateau terminates, near the bridge on which we breakfasted, and from which commence, on the one side, the Glacier de Buissons, and on the other the steep descent which forms the head of the Glacier du Taconnay, both of which may be considered to have their principal source in the Grand Plateau. The accompanying sketch of a plan of the plateau will probably render my description more intelligible. When De Saussure made his ascent, there was a similar precipice of ice situated as that marked A, and there were also crevices running across the plateau nearly in the same direction as those marked B B: and the Glacier de Buissons was in a most broken and impassable state. In subsequent ascents, the precipice and glacier below it have been found to be nearly in the same condition,

although, perhaps, a little changed in position: it is therefore nearly certain that there never will be a possibility of ascending on that side.

On the Dôme du Goûté side, the elevation of the rocky barrier is, I have no doubt, greater than on the other side, and opposes the even progress and forward motion of the glacier, so that it makes a circular movement, and works away towards the Aiguille sans Nom, as is evident from the direction of the crevices in the plain; and, falling over the rock on to the Glacier de Buissons, forms the perpendicular precipice A.

The great press of ice being towards the opposite side, only a small part of it passes above the barrier near the Dôme, which it has hitherto done in a consolidated and united state, making part of the ice-hill, up which we had such difficulty in climbing. However, a very deep crevice (C) has opened, and has been gradually widening, from the motion of the ice-hill downwards, and the part of the plateau, forming its other side, remaining stationary. This mound of ice having commenced a descent, separate and distinct from that of the glacier of the plateau, will eventually leave a precipice of ice in this part, similar to the one over the Glacier de Buissons, making a continued wall along the

whole breadth of the plateau. When the part of the plateau, now stationary, has received some augmentation from the general sources, it will again be pushed forward and fall over the rock, forming a broken glacier below, in the same manner as is now done on the other side. Thus the plateau will be guarded by a great wall of ice extending from one side to the other, and at the foot of the wall by broken, dangerous, and impassable glaciers, forming the heads to those of Buissons and Taconnay, and all possibility of ascent to the plateau from this side will be destroyed. It is inaccessible from the Italian side; it has been proved to be so on the side towards Savoy and the Glacier du Bionnassy; and I believe it is also impracticable from the Mer de Glace and Col du Géant: therefore, from the changes now operating at the commencement of the Grand Plateau, I may venture to suppose that, for some years, no attempt to reach the summit of Mont Blanc will prove successful. Considerable time must elapse before these glaciers at the entrance to the Grand Plateau can be so united (if they break up in the way I have described) as to permit any one to cross them.

I am also induced to think that great changes will probably take place during the ensuing sum-

mer on the glaciers of Buissons and Taconnay, in those parts situated nearer the valley. For the last two years there has been an immense accumulation on their higher parts, and on the first in particular, with a great increase of fissures, and a general breaking up of the whole mass. The Glacier de Buissons has been decreasing for some years in the valley; but I suspect that before long it will move down and penetrate further into it than it has ever yet done in the recollection of man. The unbroken state of the lower part, and the great inclinatiou of the large masses towards the valley, the upper strata being much more in advance than those underneath, lead me to the supposition that the lower part of the glacier will be unable to support or resist the immense increase of ice which has been pouring down upon it from the higher parts; so as to preserve that regular and constant motion with which

> " The glacier's cold and restless mass
> Moves onward day by day."

The thin veil of vapour, which had been spreading slowly over the sky, now greatly increased, changing that which had been hitherto nearly black, into a deep blue, decreasing every instant in the intenseness of colour as the vapour

thickened. It was the warning signal to proceed, and informed us that, if we wished to escape from a storm, we should hasten towards the valley. The guides became alarmed, and were desirous to make the descent with the utmost possible rapidity. They doubted whether it would be possible to proceed farther than the second Plateau if the storm should chance to overtake us; for the danger of passing the first would then be increased to such an extent, owing to the avalanches which were likely to fall if there should be any thunder or strong wind, that it would not be prudent to attempt it. This was a prospect very far from pleasant. To be obliged to pass the greater part of a day and a whole night in the centre of a glacier, surrounded by its dangers, without covering, provisions, or fire, exposed to the violence of the tempest, and perhaps to a heavy fall of snow or sleet, in addition to the intense cold of the night, would have placed us in a most terrific and awful situation, rendered even more appalling by the uncertainty whether we could proceed the next morning. This, for the reason already stated, would be impossible if the weather continued stormy till that time.

Bidding farewell, therefore, to the Grand Plateau, we commenced the descent of the declivity

leading from it, by following the steps made in the morning, and which had not entirely disappeared. In some places, indeed, we could plainly trace the route made by the party who had ascended on the 25th of July. It resembled a shallow ditch in the snow, the surface was perfectly smooth, and there were no marks of the feet. At first we did not venture to slide, there being a precipice on the right; but, before we had got half way down, the leading guide, tired of winding about, started off, and we followed his example, passing close along the edge of the precipice. My blood ran cold, and I shuddered as I did so; but it was only for a moment—in the next I was at the bottom of the hill. The slightest mismanagement of the guide, behind whom I sat, would have inevitably destroyed us.

In crossing the second plain, we also constantly lost the trace of our route among the broken parts of it and the debris of avalanches. Several had fallen since our passage in the morning, and we hurried on, lest others should come down upon us. To descend the hill from this spot to the first plateau was an arduous undertaking. It was nearly perpendicular, the lower part of it terminating in a small flat space of a few feet, on the farther side of which was a precipice. However, it was decided to glissade it. A guide

slid down to receive the knapsacks, which being placed on the ice slid down to him; the rest of the guides followed, Devouassoud and myself bringing up the rear, stopping at the very edge of the cliff. From the great inclination of this steep, the rapidity with which we slid defies all description; during the instant in which it was performed I was nearly unconscious of what I was about.

The clouds collecting above us, showed that there was now no doubt but that a very violent storm would soon pass over, if it did not break upon, the mountain. We had considerable difficulty in making our way down the cleft at the foot of the hill, and it was rather increased by the impatience of the guides, who were now most anxious to get to our quarters on the Mulêts. Unfortunately we could not cross expeditiously the plain which we came upon after another short slide. Some of the crevices had closed, others had opened, and some large blocks of ice had fallen since the morning. Among these we proceeded towards the bridge or block of ice, along the side of which we had before crossed, and which hung over one of the widest and most dangerous fissures we had met with. Our progress was marked with anxiety and fear lest this bridge should have fallen into

Drawn on Stone from a sketch by J Auldjo

Printed by C. Hullmandel

Sliding down a Snow Hill

the crevice, or rolled over, and thereby have deprived us of the means of passing, without descending much lower on the glacier. Luckily its position had not altered; but the holes which had been cut for our feet and hands being effaced, the operation was obliged to be repeated to enable us to repass, and this was done without any accident.

We continued our course among those beautiful remains of avalanches, which I have already had occasion to describe, crossing over many crevices on bridges of ice or snow; and thence proceeded direct towards the Grands Mulêts on those narrow banks, which lying between the immense fissures, had been so dangerous in the morning from the slippery state of the frozen snow. The difficulty of walking on them now was not so great, the snow being so softened as to allow the leg to sink deep into it. However, there were occasionally very severe falls, arising from the foot, having penetrated through this crust, meeting with and slipping on the old ice below.

It was about three o'clock, and we had not quite reached the Grands Mulêts, when a shower of sleet began to fall, and there was hardly time to ascend to our tent before it came down with great violence. It soon passed over; but, as all of us were wet through, we changed

our garments as quickly as possible, took a little refreshment, priming ourselves with brandy, and, having packed up our things, prepared to depart. The first guides had already got upon the ice, when a second shower of sleet came on accompanied by tremendous flashes of lightning, and

> "From peak to peak, the rattling crags among,
> Leaps the live thunder! not from one lone cloud;
> But every mountain now hath found a tongue,
> And Jura answers, through her misty shroud,
> Back to the joyous Alps, who call to her aloud."

The hail beat down with great force, the shower being thick and the stones of a very large size. I threw myself on the rock, and was covered with a sheet hastily unpacked; under which, notwithstanding the beating of the hail, the wet uncomfortable state of my clothes, and the thunder above, I almost immediately fell asleep, and continued so about a quarter of an hour, when I was startled by a dreadful clap of thunder right over me. I attempted to rise, but could not disentangle myself from the sheet; the weight of the hail which had fallen upon it, and the awkward and dangerous position in which I was placed on the rock, rendered me incapable of extricating myself without assistance. I called to the guides, but none heard me; they had dispersed over the rock, in search of

shelter, and no voice answering mine, I became greatly alarmed. The storm began to abate, and, after having lasted twenty-five minutes, entirely ceased*. I was soon extricated from my unpleasant situation; and as it appeared likely to continue fine, we agreed to start off instantly.

In descending the rock a serious accident very nearly happened, which might have cost several of us our lives, or maimed us severely. The man who was last in descending, either from carelessness or hurry, upset a large stone, and as we were much below, and right under the place from which it was moved, it came bounding down upon us, drawing along with it a great accumulation of large stones, these gathering and disturbing others as they proceeded, until at last we were threatened with a shower of rocks. This was the act of a minute; we all happily rushed in one direction, and only just avoided the falling mass.

It may be remembered that we had placed a bottle to mark the turn in the route which had

* During the first night of Dr. Hamel's ascent, while they were on the Grands Mulêts, a great quantity of rain fell, accompanied by thunder and lightning; and, from an experiment he made with his electrometer, he found the surrounding atmosphere so highly charged with the electric fluid, that he was glad to draw the instrument instantly within the canvas.

been made in ascending to the Grands Mulêts, after we had passed under those rocks. To this point we directed our course, having discovered the neck of the bottle appearing above the new-fallen hail, which had deprived us of all trace of our course. There was some difficulty and considerable danger in getting to this bottle, requiring our greatest caution in sounding with the baton at every step we made, lest there should be any new crack or hole in the ice concealed under the bed of hail. Indeed, after quitting the Mulêts, until we left the glacier, we were obliged to use this precaution. Having reached this point, we turned back towards the foot of the rocks, but unfortunately missed the route, and got into the centre of crevices without number; some of the guides declaring that it was the line of our ascent, and others the contrary. No way, however, could be found of crossing the crevices which faced us, and we continued winding among them, until at last it was quite evident that we were wrong, and we were obliged to stop.

To add to our misfortune, the storm recommenced with greater violence than before; the hailstones, large and sharp, driven with force by the wind, inflicted great pain on the face; we were exposed to it, standing on a narrow ledge,

Shelter during the Storm.

Drawn on Stone from a Sketch by J. Bridges

Printed by C. Hullmandel

overhanging an abyss. Here we awaited for a short time the return of two guides, sent to explore the crevices and banks around us, in an endeavour to discover the route of our ascent, but with very little hope of success; indeed, it was greatly feared that we would have to remain where we were for that night. The storm increasing every instant, compelled us to seek some place in the glacier in which we could obtain shelter; following the foot-marks of the guides, who had gone forward, we succeeded in finding a recess, formed by the projection of a part of the glacier over a narrow ledge in the side of a crevice. We could form no idea of the depth of the chasm, but its width appeared to be about twenty feet, and its opposite side rose considerably above us. Along this ledge we moved with great care, and had just space to stand in a bending posture, and in a row. But it was in vain to expect perfect shelter where

"The mightiest of the storms hath ta'en his stand:
For here, not one, but many, make their play,
And fling their thunderbolts from hand to hand,
Flashing and cast around: of all the band,
The brightest through these parted hills hath fork'd
His lightnings,—as if he did understand,
That in such gaps as desolation work'd,
There the hot shaft should blast whatever therein lurk'd."

Wet through, and suffering excruciating torture

from the cold, the position we were obliged to remain in was both painful and dangerous. The tempest raged with most awful fury; the gusts of wind sweeping through the chasm with tremendous violence, the pelting showers of hail, accompanied by most vivid lightning, and peals of thunder, alternating with a perfect calm, were enough to appal the bravest of the party.

We waited some time in this situation, when in one of those moments of calm was heard the loud halloo of one of the exploring guides, who was returning to us, and called to us to advance, for they had found the angle which we had so much difficulty in climbing up the day before. We soon joined him and his companion, who conducted us to it. Nearly deprived of the use of my limbs, from the excessive cold and wet state of my apparel, I could scarcely walk, my fingers were nearly frozen, and my hands so stiffened and senseless that I could not hold my baton, or keep myself from falling. Supported by one guide (the bank on which we were proceeding would admit of no more than two abreast), I moved slowly forward, and in this state arrived at the angle. The only change which appeared to have taken place was on the neck or tongue below the cliff. The day before, it touched or slightly rested on the wall, but

the end of it had fallen in, so that there was some difficulty in getting to it from the last step in the wall. One or two of the guides betrayed evident signs of fear, for the black thick clouds in which we were involved caused a gloominess approaching to the darkness which was actually produced in the gulf of the fissure. The lightning flashed every moment, immediately followed or rather accompanied by claps of thunder, showing its proximity to us, and the loud peal rolling among the mountains and glaciers, reverberated with most terrific grandeur, shaking the broken masses of the latter in such a manner, that we dreaded, at every explosion, to be hurled into the deep crevice, or crushed by the fall of some part of the glacier.

This was not a time or situation to remain in longer than was necessary for cutting steps in the wall, instead of those which had been injured; nor was it a position in which any attempt could be made to restore life to my hands or animation to my body. I had now nearly lost all feeling, from the effects of the cold; and, being incapable of making any exertion, I was lowered down to the guides, who were already on the ledge beneath the wall. At the very moment that I was rocking in the air, a flash of lightning penetrated into the abyss, and showed all the horrors of my situa-

tion; while the crash of the thunder seemed to tear the glacier down upon me. I was drawn on to the neck of ice, and sat down until the other guides had descended. The hearts of two or three failed, and they declared that we must all perish; the others, although conscious of our awfully dangerous position, endeavoured to raise the courage and keep up the spirits of the depressed. All suffered dreadfully from the cold, but, with a solicitude for which I shall ever be deeply grateful, they still attended to me in the kindest manner. They desired me to stand up, and forming a circle, in the centre of which I stood, closed round me. In a few minutes, the warmth of their bodies extended itself to mine, and I felt much relieved; they then took off their coats, covering me with them, and each in turn put my hands into his bosom, while another lay on my feet. In ten minutes, I was in a state to proceed; we divided equally the last half bottle of brandy, and then moved down the neck of ice. A guide gave me his thick cloak, which, though wet, kept me warm. I walked between two batons held horizontally by two guides, one before and the other behind me, and which I could grasp without taking my hands from under the cloak.

We kept as much as possible in the line we had pursued in ascending, and, in spite of the

storm, were merry and cheerful, although the passage of the bridges, and especially those over which we were drawn in the new-fallen hail, was not very pleasant. We were also obliged to use great care, for the covering of hail was thick. By the time we got under the Aiguille du Midi, the storm had abated, and a slight shower of sleet only continued to fall. I now had quite recovered from my numbness, and could use the baton, which enabled us to proceed with greater celerity across the plain at the foot of this aiguille, where we found many evidences of newly-fallen avalanches.

At half-past six o'clock we left the glacier, with no small satisfaction, having been about thirty hours on it. The descent of the Moraine is more unpleasant than the ascent, and requires the attention of those behind to the choice of places for their feet; for should any large stone be displaced, it would cause so many more to roll away with it, that very serious accidents might happen to those who were lower down in advance. The labour, too, of walking down the declivity of this loose mound is great, and affects the knee particularly. We found the narrow path in the face of the precipice, described in the ascent, to be covered with hail, and very slippery and difficult to keep footing

on. From this we came to the Pierre Pointue, and took a shorter route to the Châlet de la Para than the one we had followed in ascending. Old Favret's daughter was at the door awaiting our arrival, and invited us to partake of a caldron of boiling milk, which she had prepared for us. This she dealt out in large wooden bowls, and our thirst was so great, that it was quickly disposed of.

Much refreshed and warmed by the milk, we took our leave, and descended in a direct line towards the village of Les Pélérins, and shortly entered the wood, the tall pines of which had before

> " dwindled as to shrubs
> In dizziness of distance."

My knees were weak, and I anxiously desired to get to the village, as I should then find a level road to Chamonix. In the mean time I was greeted by an approaching stranger, whom I immediately recognised to be Mr. Coote, the kind friend who had shown me so much attention two days before. He had continued it in an extraordinary degree, by coming at this hour of the evening along a dirty and muddy road, to a considerable distance from the Priory, to welcome me and render me all the service in

his power. Most readily do I here offer him my sincere acknowledgments for such kindness —kindness which I could have expected only from long established friendship.

I had ordered a mule to be waiting for me at Les Pélérins; but supposing that we should not descend in the storm, but remain at the Mulêts till the next day, the owner of the mule would not have brought it that evening, had not Mr. Coote, who observed us below these rocks, desired him to obey the orders I had given. The riding was a great relief, for my exertion had caused severe pain and weakness in the knees; in other respects I did not experience inconvenience from fatigue. As we approached the Priory, other gentlemen met me, anxious to congratulate me on the complete success of the expedition, and more than one expressed their regret at not having been of the party. From them I learnt that those ladies, whom I had seen on the Breven, were principally fair country-women of my own, who by thus venturing up a very lofty mountain, the ascent of which, in some places, is very dangerous, had evinced great anxiety for the result of my undertaking. The Countess Bertrand was one of the party, and had had a telescope carried up for her, by means of which she had watched our progress

with the greatest interest, and was delighted on our arrival upon the summit. The storm which we encountered had likewise extended to the other side of the valley, and most of those who had been up the Breven came in for a share of it.

I passed through a crowd of visitors and villagers assembled at the front of the Hôtel d'Angleterre, receiving the most gratifying demonstrations, and entered the Hôtel at half-past eight; having been absent a little more than thirty-seven hours*.

My room was thronged in a moment with gentlemen of all nations, every one of them desirous of assisting me; and it was with difficulty that I could get permission to eat my supper, so anxious were they to get some account of the expedition, and to discover whether the gratification had repaid my toils and hardships. The risk which an adventurer runs who ascends to the summit of the mountain, of not seeing more than an excursion to the Col de Balme or the Breven would present to him, from the

* The only excursion to the summit of the mountain which has been before made in two days was performed by Mr. Jackson in 1825. He was absent from Chamonix about an hour less than I was; but he only remained on the summit a few minutes.

probability of mist shrouding the valleys, and clouds covering the mountains, ought to deter him from making the attempt, setting aside the chance of disappointment in not being able to reach it, the dangers to be undergone, and the hazard which he and the guides are continually exposed to of losing their lives for so trivial an object. But when a person does arrive on the summit, and no accident has occurred to interrupt the pleasure derived from the success, and a clear day, with a very extensive view, rewards his toil, then, indeed, he may consider himself well repaid. Such was my case. I must own that I was highly gratified; for I beheld scenes of which it is as impossible to convey an adequate idea by description as it is to efface their impression on the memory. Besides, having got safe through the terrible storm on the glacier, I would not have lost the opportunity of being in so awful a situation on any account, though I should have been far from choosing to expose myself to it. To all the questions I could therefore safely reply, that I was repaid—gratified beyond my fullest expectation. Indeed, although description had led me to expect much, yet I can say that I was not prepared for such splendid and magnificent scenes.

At a late hour I took one of the mineral

warm baths, which are so great a comfort in Chamonix to the weary traveller, and I felt perfect restoration from it. So little fatigued, indeed, was I, that I thought not of retiring to bed till past midnight, and, after a sound sleep, I rose at six, and went forth to search for my guides, intending to leave the valley at an early hour. The poor fellows, however, were so pressing in requesting me to remain and be present at the dinner which I ordered for them, and to take a parting glass of wine with them after it, that I could not resist.

I procured the certificate which is given to those who have attained the summit by the Sardinian government, signed by the syndic or magistrate of Chamonix and the chief of the guides, and of which a fac simile is given. In the course of the day I visited Michel Carrier, the naturalist, who was completely blinded, and his face scorched, by the reflection from the snow. One of the guides, Jacques Simond, was also suffering greatly from the same cause; the others were not much marked. My own face was scorched, my lips much swollen, and my eyes inflamed; but this was the sole inconvenience I experienced. At four o'clock I bade them adieu, and left the valley with regret; for an attachment, arising from the circumstances in

Nous Jean François Payot Syndic
[illegible] pour tout le peuple de
Chamonix, et gûl de heureusement été de
retour à son hôtel à Chamonix dans la même
journée à huit heures et demie du soir
Délivré à Chamonix le 10 août 1827.

Payot Jean François Syndic
et Simon Couttet Guide Chef

Julien Desmoulins

Coutet Joseph,

Pierre Lairoz le jeune,

Michele Savart

jean Marie Coutet

Simond Jacques

which we had been placed, and the dangers which we had shared, had grown up between these men and myself, and as I shook hands with them for the last time, every one of them wept.

Thus have I given a minute and faithful account of the particulars attending an enterprize no less perilous than interesting; nor perhaps will it be deemed presumptuous in me to say, that this brief narrative may be consulted with advantage by all those, who, influenced by a congenial spirit of adventure, may be disposed to engage in a similar undertaking.

APPENDIX.

VIEWS OF MONT BLANC.

"The human mind thirsts after immensity, and immutability, "and duration without bounds; but it needs some tangible object "as a point of rest from which to take its flight—something present "to lead to futurity—something bounded from whence to rise to "the infinite. This vault of the heavens over our heads, sinking "all terrestrial objects into absolute nothingness, might seem best "fitted to awaken the creative powers of the mind; but mere space "is not a perceptible object to which we can readily apply a scale; "while the Alps, seen at a glance between heaven and earth, as it "were on the confines of the regions of fancy and of sober reality, "are there like written characters traced by a divine hand, suggest-"ing thoughts such as human language never reached."

SIMOND.

MONT BLANC FROM SALLENCHE.

SALLENCHE is a small town, situated at the western end of a beautiful valley of the same name, and about 1780 feet above the level of the sea. From the bridge lying between it and St. Martin, or from the green slope behind the town, is one of the most magnificent views of Mont Blanc which it is possible to enjoy. In going to Chamonix from Geneva, it is the first place from which an uninterrupted sight of the mountain can be had; its

vast height breaking upon the mind with a sublimity altogether astonishing.

It is from the latter spot that my view is taken, towards the close of day, when the last rays of the sun, striking upon the snow-clad mountain with a fiery brightness, cast the lower surrounding heights into deep shade, while its own towering mass stands out in the picture with such pre-eminence as to throw into the back ground or diminish the other brilliant features of the scene.

MONT BLANC FROM THE LAC DE CHEDE.

There is a charm in the beauty and picturesque situation of this little lake which cannot fail to attract the particular attention, and claim the admiration, of every one who sees it. He will be tempted to rest a few moments on one of the large moss-covered stones lying upon its grassy bank, and dwell upon the numberless wild and romantic beauties with which the spot is surrounded. Several handsome trees, with thick foliage. standing upon its sides, cast a cool shade over it, and are reflected most exquisitely on the bosom of its water, which is of a dark green or coppery colour, and perfectly transparent. It is said to be poisonous, and I certainly had no temptation to try it; for the only living things I saw in it were three or four large snakes, gliding or creeping among the rocks at the bottom. In the back ground, part of the Glacier de Bionassay and the Aiguille du Goûté dazzle the eye, Mont Blanc raising its majestic head in proud dominion over them; and its form is often reflected in the lake with all the purity of its whiteness.

MONT BLANC FROM SERVOZ.

The valley of Servoz has not much in itself to recommend it. Its landscape is wild, diversified, and in some parts rich, but not sufficiently striking to render it interesting after that of Sallenche.

However, having passed through the village of Servoz, and proceeded a short distance towards Chamonix, a very splendid prospect presents itself, which this plate is intended to exhibit. In the centre is a hill, on which stands a tower, forming part of the ruins of the Castle of St. Michael, famous for the stories of demons and sorcerers which the people of the valley relate. The mountain on the left of it terminates the chain of the Breven. The colossal mass of Mont Blanc, and some of its aiguilles, produce a most imposing effect. There is no point from which it appears with greater grandeur—

"So varied and terrible in beauty."

MONT BLANC AND THE PRIORY OF CHAMONIX.

The village of Chamonix, or, as it is commonly called, the "Priory," from a convent of Benedictines, said to have been founded about the year 1100, having once existed there, is built on the slope of a small hill, formed by the debris of rock which has fallen from the Breven, a mountain rising close behind the village, on the north side of the valley, to the height of 4984 feet above it. The base of this mountain is united to that of the Aiguilles Rouges, but the summit is isolated, and forms

an immense precipice, overhanging the village on the north-west.

Towards the south-west of the Priory, and nearly in the centre of the picture, is represented the Glacier du Buisson. It comes completely down into the valley, and is one of the first and finest of those objects to which the attention of the visitor is directed.

Above it, Mont Blanc and the Dôme du Goûté rear their lofty summits. The former is so distant, that the latter, when seen from the valley, appears to rise above it in height; and it is only by ascending the Breven that the great difference between them can be perceived. From the valley, therefore, the view of Mont Blanc loses much of its grandeur.

Chamonix is about 3355 feet above the level of the ocean; the mountain towering over it to the height of 12,310 feet.

MONT BLANC FROM THE COUVERCLE.

There are two large glaciers which fall into the celebrated Mer de Glace, about three leagues from its termination in the valley of Chamonix. One on the right, called the Glacier du Tacul, comes down from Mont Blanc and the Col de Géant, and is generally in a very broken state; and from the immense masses of which it is composed, is a most splendid sight.

In a line with it, on the left, is the Glacier du Talèfre, whose pinnacles, rising like spires to a great height, and whose waves, coming over in magnificent curves, present a most beautiful appearance, being free from the mud which so often detracts from the beauty of a glacier.

Behind these towers, and on a level with their points,

there is a plain of ice, to arrive at which, a steep hill, where hands will be as useful as the feet in climbing, or a dirty moraine, must be ascended. From the summit of this hill the view is taken. On one side lies the plain, which is of considerable extent, and is bounded by an amphitheatre of lofty pointed aiguilles. About the centre of it, a flat rock, of an oval form, rises above the surface of the glacier; an island in the midst of ice and snow. In summer it is clothed with grass, and with a variety of Alpine flowers; hence it has been called the Courtil, the patois word for "Jardin," the garden. Its elevation above the level of the sea is about 8500 feet.

I visited it early in June, and at that time the snow had not altogether melted away; but the grass and moss were thick, and the flowers beginning to start up.

The view enjoyed from the spot called the Couvercle, whence the picture is taken, is perfectly wonderful. On the one side, a long and magnificent vista of aiguilles, their fretted points now covered with snow, now appearing above it, while constantly the avalanche pours its whole torrent down their sides, is terminated by Mont Blanc, rising like an enormous dome, and forming a most sublime scene; on the other side, the amphitheatre surrounding the Jardin; and, in front, the Grands Jorasses, a semicircle of aiguilles which closes the Mer de Glace; and behind rises the pointed pinnacle of an aiguille. Between these avenues of peaks lie the superb glaciers:

> "The savage sea,
> "The glassy ocean of the mountain ice:
> "———— its rugged breakers, which put on
> "The aspect of a tumbling tempest's foam
> "Frozen in a moment—a dead whirlpool's image.'

MONT BLANC AND THE VALLEY OF CHAMONIX, FROM THE COL DE BALME.

The Col de Balme forms the north-eastern barrier to the valley of Chamonix, and is about 7540 feet above the level of the sea; but the point from which the view is taken is not quite so elevated.

Most of the pedestrian visitants to the valley pass over this mountain in coming to or in leaving it; but many ascend it merely for the sake of enjoying the very fine prospect, and return to the Priory *.

Mont Blanc is the most prominent object; but the whole line of aiguilles on the south side of the valley has a very beautiful effect, particularly that of Argentière. The Breven, with the Aiguilles Rouges, on the north side, have also a very pleasing and conspicuous appearance. Besides these mountains, the Buet is seen, and the "Cols" which form the barrier on the opposite side of the valley.

From the great height of the mountains surrounding it, and also of the point from which the picture is taken, the valley seems to be very low and narrow, which it certainly is. Its length is about eighteen miles. The Arve takes a serpentine course through it, constituting a beautiful feature in the scene.

* Dr. Clark thus describes it: "On approaching the summit of the passage, however, the thick vapours suddenly burst away, and to our infinite satisfaction displayed the immense colossal form of the White Giant lifting his hoary head in awful majesty, and claiming his rightful reverence as indisputable sovereign of European hills: we lingered long, feasting our eyes with this most sublime spectacle, the huge Dôme du Goûté and the vast slopes of snow, glittering like silver in the glorious burst of sunshine."

MONT BLANC FROM THE VALLEY OF COURMAYEUR.

The south side of Mont Blanc is represented in this plate. The glacier of Brenva, a very extensive and beautiful one, commencing at the base of the mountain, is on the left of the plate. The upper part of this glacier is terrific, the slope being rapid, and the ice broken, heaped up, and intersected by innumerable crevices.

Notwithstanding the great beauty—the icy dazzling magnificence of the northern side of the mountain—the view is equalled, if not surpassed, by that of the black and awful form rising up at the end of the beautiful and luxuriant valley of Courmayeur. It is a spectacle which elevates the mind to ideas the most sublime, and at the same moment procures it enjoyment the most delightful, from the magic effect of the contrast of the rich valley with the fantastic shapes of the primitive rocks. The valley of Courmayeur, becoming narrow between two tolerably high mountains, branches off and forms the valleys of Veni and Entréves, both of which run at right angles with it. Facing the valley, appears the colossal rock of Mont Blanc, with its numerous aiguilles. The "Monarch of Mountains" proudly raises himself up to a height of eleven thousand feet; and, having this side of his vast body turned towards the sunny climate of Italia, he disdains being covered with his snowy mantle, and shows the "naked majesty of his form." His satellites are not all so careless; some have their cloaks of ice, some their caps of snow, yet all are worthy of being attendant on the Grand Monarch.

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This sketch gives a most perfect idea of the beauty and magnificence of the aiguilles on the south side of the valley, and also the position and appearance of Mont Blanc itself. I have endeavoured to mark, as correctly as the nature of the sketch will allow, the line I pursued in the ascent, as well as the old route from the Grand Plateau to the Rochers Rouges, where it joins the new track.

MAP OF THE MOUNTAINS AND GLACIERS WHICH SURROUND THE VALLEY OF CHAMONIX.

This map is taken from the *Carte Physique et Minéralogique par J. B. Raymond, Capitaine au Corps Royal des Ingénieurs Géographes Militaires;* the most correct one that has been published.

The letters refer to the geological structure of the mountains.

G Granite.
Gn Gneiss.
Cc Limestone.
S Transition slate.
⋈ Gypsum.
P Lead mine.
C Copper mine.

The pink line marks De Saussure's route in ascending Mont Blanc; the yellow line that which I pursued. The red line is the route over the Géant to Courmayeur.

EXTRACT from Notes taken during an Ascent to the Summit of Mont Blanc, on the 8th and 9th of August, 1827, by Michel Carrier, Naturalist, residing in Chamonix.

"I feel it to be a great misfortune that my notes written at the Grands Mulêts, and on the summit, were so much damaged by the effects of the terrible storm which fell during the descent, that they are comparatively useless, the following being only a small part of them.

" DISTANCES.

	Hours.	Min.
From the Priory to the Chalet de la Para	2	0
From the Chalet de la Para to the Pierre à l'Echelle	2	30
From the Pierre à l'Echelle to the Grands Mulêts	4	30

" The height of the station on the rocks of the Grands Mulêts where the tent was pitched is 9900 feet above the level of the ocean.

From the Grands Mulêts to the first Plateau	3	0
From thence to the Grand Plateau .	2	0
From the Grand Plateau to the summit	3	0

" The summit of the mountain is 15,665 feet above the level of the sea, and it requires seventeen hours' march to reach it; but the difficulties which are met with lengthen the route, retard the march, and render this calculation of the distance very uncertain. Indeed it is generally estimated at eighteen leagues, amounting to fifty-four English miles. For the descent, nine hours are required.

" GEOLOGY.

" The first rocks which are found *in situ* on the route are about forty-five minutes' distance from the Priory, at the base of the mountain of Les Pélérins. They are composed of beds of gneiss, the direction of the strata being north-east and south-west, the dip south-east, and the angle of inclination 60°, as all the other strata

which enclose the valley are situated. The mica is predominant in this rock.

" The higher the ascent is made, the more abundant the quartz becomes; and, at the height of the Pierre Pointue, hornblende occurs in lamellæ. A little higher still, the gneiss gives place to beds of hornblende slate, alternating with actynolite, and this latter with gneiss and a greenish-coloured granite*.

" A few hundred feet above the Pierre à l'Echelle, this granite alone occurs, which, rising into lofty pyramids, forms the beautiful Aiguilles of Blaitière and Midi.

" Soon after leaving the Pierre à l'Echelle, the ravines which divide that part of the glacier du Buissons are traversed, but the passage is rendered dangerous by the constant fall of avalanches and rocks from the Aiguille du Midi.

" The Grands Mulêts are two small isolated rocks, in the midst of the eternal fields of ice which descend from Mont Blanc. These rocks are composed of large vertical patches of quartz, hornblende, fibrous steatite, and talc, with some lamellæ of a brown-coloured mica here and there disseminated; but the proportions of the principal constituents of these rocks vary from one place to another. It is not rare to find small acicular crystals of epidote, of a clear green colour, accompanied by sulphuret of iron crystallized in the cube, asbestos, and crystals of adularia imbedded in the mass.

" Leaving the Grands Mulêts, the route lies towards the south-south-west until it comes near to the Dôme du

* The protogine of some French geologists. It is a chloritic granite composed of feldspar, quartz, and chlorite, or talc, the two last taking the place of mica.

Goûté; and at that point the slope becomes rapid, and the line returns towards the south-east, the hills being ascended by a zig-zag course till the first plateau is attained. From this situation, the dark rocks which compose the Dôme du Goûté are visible, though they are very distant, their perpendicular face not allowing the snow or ice to remain on it. These rocks appear to be sienite, and this conclusion seems correct; for it is impossible to discover any appearance of stratification. Moreover, this rock is found on the plain below the Dôme, its hornblende often vitrified upon the surface by lightning.

" Before arriving on the Grand Plateau, another plain must be traversed, and two steep hills must be ascended: they are called the Petits Montée and the Grande Montée.

" At the other end of the Grand Plateau are immense crevices and cliffs, the passage of which is attended with many difficulties; but, having once passed them, danger no longer exists. This forms part of the route discovered in July last.

" Having traversed these crevices and cliffs, the track leads towards the south-east, and up the ' Epaule Droite' of the mountain. The increasing inclination of the slope which must be ascended to gain the Rochers Rouges makes it necessary to cut deep steps in the hard snow for the feet.

" A short distance above the Rochers Rouges are situated the Derniers Rochers. They are composed of large beds of granite, in one place of a greenish, in others of a reddish colour. They lie in great disorder, which seems to be produced by the constant striking of the lightning upon them.

" After another hour's most laborious climbing, the summit is attained. It is difficult to express the pleasure

enjoyed, when, after so many dangers, and so much fatigue, the enterprising traveller finds himself on the highest point of the colossus of the Alps. What a gratification he derives when he beholds at his feet the pointed peaks, the grouping, and the details, of so many lofty mountains; when he gazes on a picture which extends from the snow-covered summits of the Apennines to the fertile plains of France!

" From the summit a rock is seen a few toises below, towards the south-east, which terminates a ridge of the Col du Courmayeur. This rock is composed of granite and sienite, the hornblende of which is also vitrified in some parts.

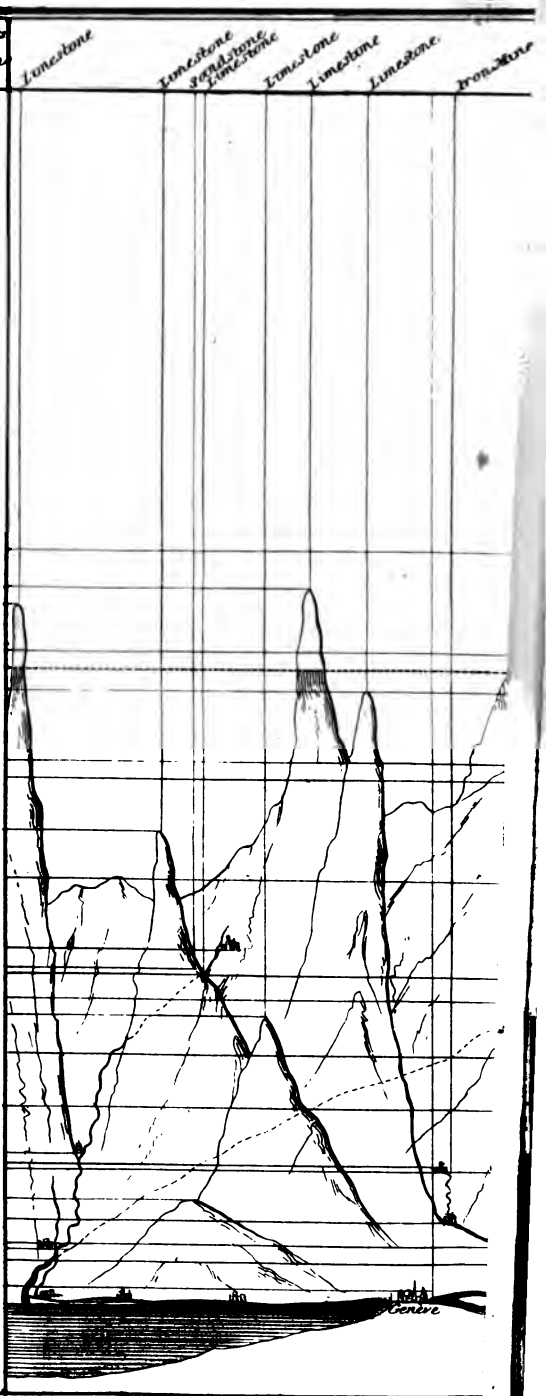
" There is a fact which appears to have escaped the notice of all those who have before visited the summit. It is, that the granite which forms this chain finishes almost in a point above the glacier du Miage, and that from thence to Mont Blanc it hardly occupies two hundred toises of extent, running from south-east to north-west; being replaced, and in many instances covered, by a fine gneiss, along the whole length of this chain to the Bonhomme.

" I have observed the same fact in the Val Coratzo, at the foot of Mont Rosa; and the frequent visits which I have since made to several points in the Allée Blanche and the Mont Joie have confirmed me in this opinion.

" BOTANY.

" It would be a useless and tiresome task to cite all the rare plants which are found on the mountain before arriving on the glacier du Buissons. It will be quite sufficient to make known those which grow on the Grands Mulêts.

Scale of English Feet	Names of Places & Mountains on the right side of the River Arve.	Height in French Toises.
2450		
2000		
	Le Buet	1576
	La Dent du Midi	1500
1500	La Dent d'morcle	1496
	L'Aiguille de Varens	1388
	Line of	1350
	Le Brevon	1306
	L'Aiguille de Tanins	1300
	Le Col de Balme	1181
	La pante Noire	1147
	La Dent d'Oche	1050
1000	Le Môle	948
	Village of St Pierre	834
	Mont d'Abondance	803
	La Forclaz	796
	Vitonvine	743
	Mont des Verons	711
	Trient	650
	Chamonix	525
500	Orsiere	441
	Jeat	428
	Servoz	425
	St Branchier	371
	Bossy	369
	Samoens	328
	Montjoux	290
	Martigni	270
	Cluse	233
	Colline de St Pierre	200
	Level of the Lake of Geneva	138
100	Depth of L. Geneva	38
	Level of Ocean.	



GEOLOGICAL & COMPARATIV

Phyteuma Hemispherica.
Saxifraga Brioides.
Poa Alpina.
Agrostis Alpina.
Planta Cryptogamia, several varieties*."

End of Extract.

GEOLOGY OF MONT BLANC.

MONT BLANC is composed of granite, in nearly vertical strata, running parallel with one another from north-east to south-east, a little inclined towards the south-east. The aiguilles are of the same rock, lying in the same manner, and form very acute pyramids. On the south side, as I am told, the position of these strata is seen to advantage. Vast ridges of limestone and slate lie against the mountains and aiguilles like buttresses. These various beds are composed of granite, gneiss, and sienite.

GEOLOGY OF THE VALLEY OF CHAMONIX.

The direction of this valley is north-east to south-west; about eighteen miles long, and from a quarter to half a mile broad. The Col du Balme closes it at the north-east end; the Monts Lacha and Vau-

* M. de Saussure found, about the height of 11,660 feet,
Silene Acaulis.
And on the Derniers Rochers,
Lichen Sulphureus.
Lichen Rupestris.

dagne at the south-west; the Breven and Aiguilles Rouges range along it on the north; Mont Blanc, its aiguilles, and the four great glaciers of Du Buissons, Des Bois, Argentière, and Du Tour, form the south side of it.

The Col du Balme, the Lacha, Vaudagne, and Frielaz, are all composed of clay-slate and primitive limestone; the strata nearly vertical, and running from north-east to south-west. The Breven and Aiguilles Rouges are composed of gneiss, lying in beds, and mica slate, containing quartz, feldspar, and tinged red by iron. The transitions from the solid gneiss to brittle mica slate are beautifully distinct. The stratum is vertical, and runs with great regularity from north-east to south-west.

The granite of Mont Blanc is composed of white feldspar in considerable quantity, a greyish quartz, and small plates of mica, giving place to chlorite and talc, schorl, garnets, and hornblende, in which are found pyrites crystallized in the cube. The peaks or aiguilles are inaccessible, but their bases are attainable.

The rock of the Aiguille Blaitière is granite, composed of reddish feldspar, transparent quartz, and blackish-grey mica.

The Aiguille du Plan, granite, and a gneiss near the base, enclosing beds of granite, passing one into the other.

The Aiguille du Midi, granite, mixed with hornblende.

The Aiguille du Bochart, gneiss.

The Aiguille du Dru, granite.

On Montanvert are found masses of amianthus, feldspar, and rock crystal.

A

SHORT ACCOUNT

OF THE

DIFFERENT ASCENTS TO THE SUMMIT

OF

MONT BLANC.

1762. The first attempt to reach the summit was made this year by Pierre Simon of Chamonix, who endeavoured to accomplish it by the Glacier du Buissons, and again from the French side, but failed in both.

1775. Another unsuccessful attempt was made by four villagers, who tried it by the mountain of La Côte. They overcame many difficulties, but were obliged to return, on account of the suffering they endured from the suffocating heat and rarified air.

1783. Three guides of the village, following the route of the last, had no better success than their predecessors: one of these told M. De Saussure that it was perfectly useless to carry provisions in making the ascent, for it was impossible to eat; and that if he ever tried it again, the only things he would carry would be a light parasol and a bottle of scent. "When I pictured

to myself," says M. de Saussure, "this strong and robust mountaineer climbing these mountains of snow, in one hand holding a parasol, and in the other a bottle of 'eau sans pareille,' it presented so strange and ridiculous an image, that nothing could give me a better idea of the difficulty of the enterprise, and of the absolute impossibility of any man who had not the head and legs of a Chamonix guide ever to accomplish it." Mons. Bourrit of Geneva also attempted it, but was prevented from continuing his course by a tremendous tempest.

1784. M. Bourrit tried it again this year, but chose a different route, ascending the west side of the mountain. He had five guides, two of whom got within 60 toises of the summit, by their account, but were obliged to return. He could not follow them, being overcome by cold and fatigue. The whole party then descended.

1785. M. De Saussure, M. Bourrit, and M. Bourrit, jun., with 15 guides, left Bionassay, in the beginning of September, and ascended the glacier of the same name. They slept near the base of the Aiguille du Goûté, and next day climbed to the summit of it; but the snow was so soft that they could proceed no farther. They returned to the place where they had slept the night before, and next day descended into the valley.

1786. In June six Chamonix guides again attempted it, but gave it up through fear and fatigue: they were alarmed at the black appearance of the sky. Jacques Balma*, as they were returning, strayed from the party,

* Balma is still living, and is even now a very active guide.

and lost himself among the hills and blocks of ice on the glacier, and was unable to regain his party. He remained all night in some hole or cave, which he found in the ice. Next morning he wandered about, and discovered a route by which he thought he could get to the summit, and then returned to Chamonix, with a determination to keep it a secret.

1786. However, Dr. Paccard, a doctor of medicine and a native of Chamonix, had some suspicion that Balma knew a track which they might follow with a prospect of success, and tried in vain to get this information from him; but they agreed, at last, to go together and make the attempt. On the 7th of August, they left the Priory, and slept on the summit of the mountain of La Côte. Thence they started the next morning at four o'clock; and, after surmounting innumerable difficulties, they attained the summit at half-past six in the evening. They left it at seven, and about midnight arrived at the spot where they had slept the night before; and, at eight o'clock on the morning of the 9th, returned to Chamonix. M. de Saussure, having heard of this success, hastened to the valley, and, with seventeen guides, immediately attempted to follow the route of James Balma, but from the bad state of the weather did not succeed.

1787. In July, M. de Saussure sent Balma to reconnoitre the glacier, who reported that it was not in a fit state; but, on the 1st of August, this indefatigable traveller left Chamonix, at seven A. M., with a servant and eighteen guides. At two o'clock, they arrived on the summit of the mountain of La Côte. Next day

they crossed the glacier, and halted on the second plateau at four. Here they passed the night, and next day gained the summit, at eleven in the forenoon. They remained on it for nearly four hours, leaving at about three o'clock, and descended to about 1100 toises below the summit, slept there, and next day arrived at the Priory.

M. Bourrit set out on the enterprise the day of their return, but bad weather again drove him back.

1787. On the 9th August, Colonel Beaufoy, with ten guides, attained the summit, having left Chamonix the day before, and returned to it on the 10th. He was enabled to ascertain with accuracy, that the latitude of the summit of Mont Blanc is 45° 49′ 59″ north. At twelve o'clock, the mercury in the thermometer stood at 38° in the shade. At the same hour, in Chamonix, and in the shade, it stood at 78°.

1788. M. Bourrit, his son, Mr. Woodley, and Mr. Camper, started together; but, when at a great elevation, a severe storm separated the party, of whom Mr. Woodley was the only one who reached the summit, which was on the 5th August. He and his guides suffered dreadfully, and I believe he arrived at the Priory with his hands frozen. M. Bourrit never attempted the ascent again. Fate seemed to be against him.

1791. Four Englishmen made an attempt; but, when near the summit of La Côte, a guide made a false step, and displaced a piece of rock, by which one guide had his leg broken; another, who now keeps a cabinet of natural history in Chamonix, had his skull severely

fractured; and all were more or less injured. The guide whose skull was trepanned used great persuasion to induce me not to ascend the mountain, at the same time showing me his head as an argument.

1802, 10th August. M. Forueret, of Lausanne, and Baron Doorthesen, a German, with seven guides, attained the summit. They met with great difficulties; and, in addition to them, experienced a tremendous storm. They remained on the summit twenty minutes, and then descended part of the way, performing the remainder, and arriving in Chamonix, on the 11th, having taken three days to do it. They seem to have been greatly disappointed, for they protested that there was nothing in the world that could induce them ever to attempt such an expedition a second time.

1812, Sept. 10th. M. Rodatz, of Hamburgh, gained the summit.

1818, August 4th. Count Mateyeski, a Russian, also succeeded.

1819, July 12th. Two Americans, Dr. Renseler and Mr. Howard, ascended the mountain, and attained its summit.

——, August 13th. Captain Undrell, R. N. made a successful ascent.

1820, August 19th. Dr. Hamel, a Russian, with Mr. Durnford and Mr. Henderson, two Englishmen, and a gentleman from Geneva, and twelve guides, ascended to

the Grand Plateau. In climbing from it, up the side of Mont Blanc, an avalanche swept away the whole of the party. Some of them extricated themselves, but three guides were driven into a crevice and perished.

1822, August 22d. Mr. Clissold gained the summit.

1823, Sept. 4th. Mr. H. H. Jackson arrived on the summit, and descended the same day to Chamonix; being, I believe, the first who ever accomplished this arduous task in so short a time, having been absent thirty-six hours and a half from Chamonix; but he remained on the summit only three or four minutes.

1825, August 26th. Dr. E. Clarke and Captain M. Sherwill made the ascent, taking three days to accomplish the undertaking.

1827, July 25th. Mr. C. Fellows and Mr. W. Hawes gained the summit, having discovered a new route. They would have accomplished it, I believe, in two days, had they not lost three hours in the search for this new track of ascent.

——, August 9th. My ascent to the Grands Mulêts was on the 8th, and thence to the summit on the following day, pursuing the route discovered in July. I remained on the summit one hour, and descended to Chamonix the same day, having been absent thirty-seven hours.

There have, therefore, been fourteen successful ascents; and, not including guides, eighteen persons have gained

this great height. The majority of these are Englishmen, ten being their number. Of the rest, two are Americans, two Swiss, one Russian, one German, one Dutchman, and one Savoyard. It is a singular thing, that no Frenchman has ever been on the summit. Some years ago, a party of guides made the ascent for pleasure, and Maria de Mont Blanc, a high-spirited girl, accompanied them, being the only woman who has ever gained the summit. Napoleon also ordered a party of guides to ascend and plant a cross on the summit, which was done, but it was blown down in a day or two afterwards. There have been a great many unsuccessful attempts to reach the summit, besides those which I have enumerated; but these are the only interesting ones which I have been enabled to get any account of.

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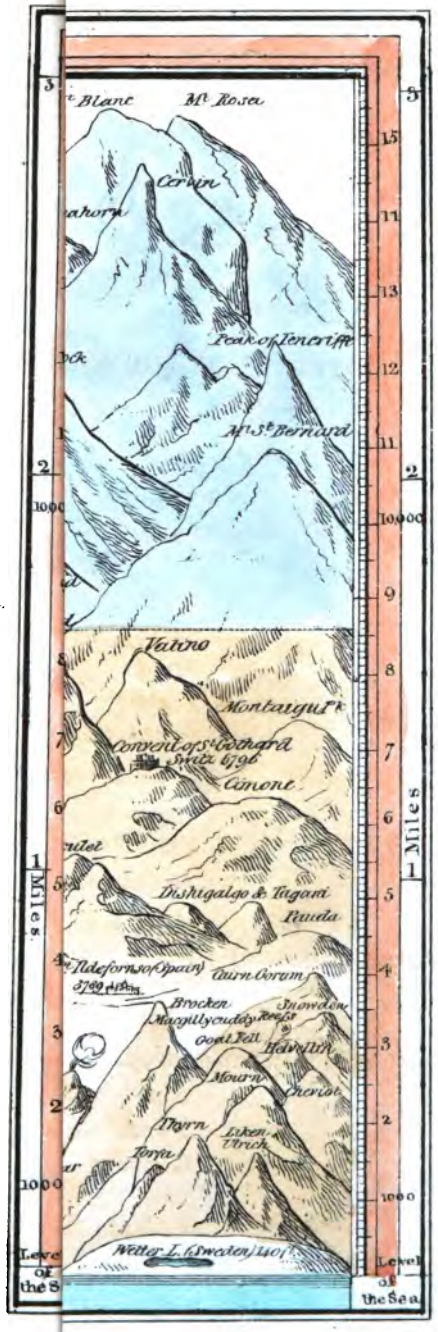
TO THE

COMPARATIVE HEIGHTS OF MOUNTAINS IN EUROPE.

Name.	Country.	Height. *Feet.*
Anzeindaz, Mount . .	Switzerland	7820
Areskutan	Sweden .	6180
Argentière . . .	Savoy .	12,870
Athos, Mount . . .	Turkey .	3353
Ax Edge Hill . . .	England .	1200
Azore (peak in the island) .	Azore Islands	7016
Ballon	France .	4651
Ben Lawers . . .	Scotland .	4015
Ben Lomond . . .	Ditto .	3240
Ben Nevis (highest in Britain)	Ditto .	4380
Ben Wyvis . . .	Ditto .	3720
Black Comb . . .	England .	1919
Blanc, Mont (highest in Europe)	Savoy .	15,665
Breithorn	Alps .	12,793
Brenner	Tyrol .	5109
Brocken	Germany .	3486
Cairngorm	Scotland .	4050


Blanc
M. Rosa
Peak of Teneriffe
M. St. Bernard
Vatino
Montaigu
Convent of St. Gothard
Cimone
Dishigalgo & Tagani
Pavida
Aldeforns of Spain
Brocken
Snowden
Mourn
Cheviot
Lakes Utrich
Terra
Wetter L. in Sweden
Miles
Level of the Sea

EUROPE.

Name.	Country.	Height. *Feet.*
Canigou	France	9207
Cantal	Ditto	6089
Cawsand Beacon	England	1792
Cenis	Piedmont	6778
Cervin	Alps	14,754
Cimone	Italy	6401
Cheviot Hills	England	2658
Cramont	Alps	8958
Dishigalgo (highest of Uralian mountains)	Russia	4900
Dofra Fiall	Norway	3600
Etna	Sicily	10,874
Finisterarhorn	Alps	14,096
Frau	Switzerland	12,150
Furca	Alps	13,100
Furca del Bosco	Switzerland	7695
Galenstok	Alps	12,013
Gibraltar (rock)	Spain	1439
Goat Fell	Island of Arran	2945
Great Glocknor	Alps	12,543
Grimsel Peak	Ditto	9695
Gross Glitckner	Tyrol	13,830
Gross Kogl	Carinthia	9700
Hart Fell	England	3304
Hecla (volcano)	Iceland	5000
Helvellin	Wales	3055

Name.	Country.	Height. Feet.
Hoch-horn	Saltzburgh	10,660
Holyhead, Mount	England	709
Hormalen	Norway	3000
Hospital of Grand St. Bernard (highest habitation in Europe)	Alps	8040
Hospital of Grimsel	Switzerland	6003
Ida	Turkey	4960
Ingleborough	England	2361
Jungfrau	Alps	13,725
Kesmark Peak	Hungary	8508
Krivan (mountain), gold mine, highest in Europe	Ditto	8027
Kyria Mountains	Russia	3015
Lang Fiall	Norway	2200
Leigh Hill	England	993
Liken Ulrich	Norway	1600
Lomnitz Peak, highest of the Carpathian Mountains	Hungary	8458
Louciera	Alps	14,450
Macgillycuddy Reefs, highest in Ireland	Ireland	3404
Malvern Hills	England	1444
Mangerton	Ireland	2505
Melun Rock	Alps	11,428
Montaigu Peak	Pyrenees	7310
Montferrat	Spain	3300

Name.	Country.	Height. *Feet.*
Mourne	Ireland	2500
Mulhacen, highest in Spain	Spain	11,801
Nephin Mayo	Ireland	2634
Ozon	Alps	13,444
D'Or, highest in France	France	6185
Parnassus	Greece	3955
Pauda	Uralian Mount.	4512
Peak of Teneriffe, from the base to the summit 11 miles	Canary Islands	12,358
Pelvoux	Pyrenees	14,215
Pic Blanc	Ditto	10,205
Plynlimmon	Wales	2468
Reculet	Switzerland	5580
Rœttvik	Sweden	6000
Rosa	Alps	15,540
Roth-horn	Tyrol	9640
Rotondo	Corsica	8696
Saddleback	England	2787
Saulo	Norway	5654
Sca-fell, highest in England	England	3016
Schihallien	Scotland	3281
Schreck-horn	Alps	11,400
Sierra de Malhao, highest in Portugal	Portugal	6000
Simplon, Mont	Alps	6590
Skiddaw	England	3022

Name.	Country.	Height. Feet.
Sna Fell	Isle of Man	1004
Sna Fiall	Norway .	6860
Sneebutton . . .	Ditto .	8295
Snowdon, highest in Wales .	Wales .	3571
Soracte	Italy .	2268
Sliebh Dorin . . .	Ireland .	3150
Steiner Alp . . .	Alps .	10,941
Stromboli	Lipari Islands	2684
St. Angelo, Mont . .	Ditto .	5260
St. Bernard, Mont . .	Switzerland	11,006
St. Gothard, Convent of .	Ditto .	6796
St. Gothard, Mont . .	Alps .	9075
Swuku	Sweden .	6050
Tinto Hill . . .	Scotland .	2432
Thyril	Iceland .	1800
Torfa	Ditto .	1400
Valino, Mont, highest of the Apennines . . .	Italy .	8300
Venlatta Peak . . .	Spain .	11,300
Vesuvius (volcano) . .	Italy .	3731
Volcano (Stromboli) . .	Lipari Islands	2556
Wetter-horn . . .	Alps .	10,630
Wharnside . . .	England .	2384
Wrekin	Ditto .	1320

THE END.

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